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THE FORUM OF EDUCATION.

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The Forum of Education.

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The Disciplinary Value of School Subjects.*

III.

By M. W. KEATINGE.

The supporters of the Latin and Greek classics and of mathematics have claimed that these traditional studies exercise the mind as a whole and make it possible for a person who has been through the severe discipline demanded by either of them to apply himself successfully to the analysis and organization of any raw material or subject matter that he may be confronted with. As a rule, the claim has been made in very general terms and incidentally, and it has been used from time to time to disparage the newer subjects rising on the horizon of school life, modern history, modern languages, English literature, geography and natural science. If proof were needed for the claims of the formal training given by the older subjects, the tendency was to supply a two-fold justification. (1) Instances were given of men who after a severe course in one of these disciplines had attained high positions in law, medicine and public life. (2) What was known as the faculty psychology was called in as an ally.

The first line of argument looks well at the outset. There was no difficulty in finding high wranglers who had become distinguished judges, or distinguished classics who had risen to the top of such diverse professions as law, medicine, and politics. But examination shows that this line of defence was valueless. In the middle of the last century the wealth of the country, and with it the demand for professional men of every kind, was growing rapidly, and in England, at any rate, the only source from which it could be met was the two older Universities, then of very small dimensions. Graduates of these Universities had, therefore, little competition to face, all their competitors had much the same training as themselves, and so great was the demand that few graduates of ability failed to make good.

The argument from the faculty psychology was on a different level. The difficulty of discussing it lies in the fact that it was never explicitly stated what the faculty psychology was. The customary psychology talked of properties of mind such as memory, imagination and attention, as if they were distinct functions of the mind, and could each of them, apart from the others, be trained by a specific subject matter. The Renascence writers took it for granted that learning Latin authors by rote cultivated the memory; Kant, in the lectures on education, given from his chair at Königsberg, assumes that the " judgment " and the " understanding," as separate functions, can be trained by special exercises. Newman in his " Idea of a University " lays it down that the Latin and Greek classics are the special studies by which health and liberality of mind can be attained ; in other words, that all the " faculties " of mind can be developed by this one study.

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* Based on a paper read at the British Association for the Advancement of Science, Southampton, September, 1925.

But the precise implications of a faculty psychology are elusive. For the person who wished to get support of some kind for his own special study as a mainstay of the curriculum, or for the Neo-Herbartian psychologist anxious to destroy a puppet which he had erected, a faculty was a function of mind working independently of the other functions which constituted the mind. Yet few psychologists would have admitted the validity of such a crude position. Aristotle uses phrases which might bear that interpretation, as when he says " We must now proceed to discuss memory and decide to which portion of the mind it should be assigned " ; but it is highly unlikely that he would have accepted the rôle of a " faculty psychologist " if by this he were understood to mean that the various functions of the mind work side by side, unaffected by one another and uncorrelated by some central principle. Equally would Kant have repudiated such a position, though his language, like that of Aristotle, is ambiguous. Both, in fact, used general terms such as " memory " with little or no analysis of what they covered, and all psychologists have tended to give a merely verbal explanation of whatever qualities of mind they were considering by referring them to one of the customary " group terms."

The tendency of modern psychological thought is to recognize (1) that terms must be accurately defined ; (2) that terms like " memory " cover a large number of mental processes—*i.e.*, that there are many types of memory ; (3) that not only the various types of memory are variants of a common function, but that all the functions of the mind, in so far as these can be expressed in the general term to which reference has been made, are themselves partial functions of a unified (and, indeed, a unifying) mind. It is true that this is not fully recognized by every school of psychology, but the bearing of this discussion is educational, and education is a philosophical rather than a psychological discipline. It starts with the conception of a unified, self-conscious, and spontaneous personality, to which, if education is to have any meaning, all the minute analyses and investigations of psychology have to be referred and in the fuller life of which they cease to be abstractions and have a concrete existence.

These three tendencies can be well illustrated from any of the traditional " faculties," and memory will do as well as any other. This term is used to cover so many functions that a glossary is needed to explain its meaning in any context. It may simply mean the retention of something experienced (as when a boy " remembers " his repetition), or it may mean one of the many " special " memories. A complete process of committing to memory and recalling involves perception, attention, retention, imagery, and, if there has been any difficulty, self-consciousness. In other words, any one portion of the process, when considered, seems to overflow into something beyond it. But a central function can be found. The term may be used to denote the consciousness of the similarity between a present and a past experience. Only in this sense is it a unitary function, and the training of memory in this, the root sense of the word, would be the cultivation of the power of unifying past and present, of consciously realizing the present experience as embodying the whole of previous training and life. This as tending to the unification and intensification of personality is a high educational aim, but it is, of course, not what usually is meant by the training of "memory."

In the same way it may be shown that a term like "attention" covers a multiplicity of processes, such as selection, anticipation and conation; but that in its essence, in what is called voluntary attention, it consists of attending to the idea of attending—*i.e.*, is highly self-conscious and brings self-control into play. This, again, is a unitary function, and, like the centre function of memory, stands in close connection with self-consciousness and personality.

It is clear, then, that a treatment of "formal training" can be approached only from some definite position about the nature of mind. These positions can be laid out on a scale of which the extreme limits and intermediate stages may be indicated as follows:—

(1) Mind is a unitary process.
(2) Mind embodies a number of unitary functions which can be distinguished as different from one another in essentials, functions which can with a real meaning be termed "memory," "imagination," "attention," and so forth. These functions, however, are all relative to and conditioned by a central unitary function.
(3) These larger functions are independent of one another.
(4) The larger functions are merely convenient groupings of smaller ones. At the extreme or "atomist" end of the scale, "mind" consists of an indefinite number of minute functions or habits which can be combined in an indefinite number of ways, but each of which works independently of the others.

The doctrine that a given subject trains "mind" as a whole can be adopted only by those who accept the first of these positions, and the opposite doctrine that each subject gives a minute specific training only by those who adopt the fourth. Intermediate positions would recognize that individual subjects give a general training in so far as they exercise the more general and central functions of mind and a more specific one in proportion to their failure to do so. The doctrine of a transfer of developed quality through a moral channel (*i.e.*, self-control), or through logical habits and general modes of attack, is based upon the conception of mind indicated by the upper end of the scale; that of transfer through community of subject matter is justified by the atomistic position at the lower end.

So far this investigation has been chiefly psychological; what is the educational implication of the position reached?

Whenever a crude doctrine, which, in spite of its crudeness, has worked well enough to commend itself to persons of reasonable sense, is given up, there is always a danger that the good in it may be thrown out of the window with the bad. In this case the element of truth was that the subjects supposed to give formal training were difficult and highly organized. They were always subjects that exercised the functions of mind that we have indicated at the upper end of our scale. Both mathematics and classics gave information, but the information was accompanied by and could only be gained through the acquisition of an elaborate technique ; a process which involved much persistent work and effort. When the cruder doctrine of formal training was given up the natural tendency was to lay more stress on the information to be acquired than on the methods by which it should be won, and this, to some extent, was justified. For it was perfectly true that generations were growing up in lamentable ignorance of the facts of history, geography, and English literature, of political science and of fine art, and that this ignorance was little compensated for by the technique of an indifferent education in the classics. It was inevitable that this reaction should bring with it an undue acquiescence in receptivity, and this is still to be found. In spite of improvements, history, geography and English literature are still taught with too little apparatus and too much as memory work. Methods like the Dalton plan, when crudely conceived, estimate work done in terms of extensive reading, of the getting through a certain number of pages, rather than in terms of the intensive overcoming of real difficulties. The numerous suggestions that the teacher should stand on one side and let the class work out its own salvation have little meaning when a class is working right up to the limit of its capacity in a really difficult subject, or when a young pupil is learning a difficult instrument like the violin. In these cases an elaborate technique has to be learned, and the question with which we are confronted, and which we have scarcely begun to consider is this : " What are the techniques that are proper to each branch of knowledge, and what is the relation between these techniques and the information that each branch of knowledge supplies ? No problem of curriculum is more important. An all-round training of mind is given not by a wide curriculum, but by arranging that there shall be intensive work of the right kind, work, that is to say, which produces the right technique, in each subject, or alternatively that some one or two subjects shall be studied from such varied standpoints that a variety of techniques can be introduced into and mastered in their study.

Such a subject as geography, for example, can be studied from a historical standpoint or from a purely scientific standpoint. But neither of these methods, information apart, can justify a large place in the curriculum for this study. Geography is the meeting-place of the humanities and the sciences, and the methods of attack that it should use are a special blend of humanistic and scientific methods. Its reasoning is approximate, it is often extremely difficult to isolate the precise causes of its phenomena, the use of statistics needs a special technique and considerable judgment, and no other subject gives precisely this combination. Again, in selecting branches of natural science or in choosing the portion of any branch that is to be taught, we naturally have to bear in mind the extent to which the portion selected forms an introduction to a certain department of knowledge, but we have also to ask if the method to be used is characteristic of that department, if the methods used in each department of science are when combined characteristic of scientific method as a whole, and, finally, if the methods of learning and of attack employed in the whole curriculum represent in their entirety the working of the human mind when confronted with the numerous problems and difficulties that face it in life.

Alternatively, it is possible to teach a single considerable subject, such as the Latin and Greek classics, in such a way that many types of technique are acquired. Classics may consist of a merely linguistic and literary study: but it may also embrace the study of ancient geography, of ethnology, of the economic problems that confronted the Græco-Roman world, and of the growth and decay of Greek mathematics and science: and this extension of subject matter and the additional techniques involved would in their turn give a general notion of "form."

Thus by clearly delimiting the mode of attack and the method characteristic of each major study and by organizing the right combination of them, it is possible to give an all-round training to the mind; one to which the term "formal training" might be applied. But clearly it would be unsuitable to use in such a novel sense a term with such a past, and, therefore, the term "formative discipline" is a better one.

From this standpoint it is desirable that the proper technique should be devised for each subject, that this technique should be as rigid as the subject permits, and that no subject be admitted into the curriculum as a major study which does not lend itself to the development of a proper technique. The production of the right blend of techniques will thus stand out as a chief aim in education, since it is improbable that the interests which every teacher seeks to awaken will be intensive or permanent unless they have been accompanied by or produced through these techniques.

In general, the educational implications of this train of thought are as follows:—

(1) It emphasizes the need for rigidity in the subjects taught.

(2 While it naturally does not exclude interest, it stresses the position that each increase of interest warrants an increase of difficulty.

(3) It demands a due proportion between intensive and extensive work in any subject. For intensive working in a small field trains technique, while extensive teaching indicates the general value and the content of the whole subject.

(4) By establishing the production of techniques as an end it leads to the position that self-development or self-realization is brought about by the expression of natural tendencies through these techniques, and suggests that the very questionable term "self-expression" (questionable because it often leads to an educational doctrine of doubtful validity) may be reserved for the short circuiting of natural tendencies: a process which, far from resulting in character, may be destructive of it.

(5) It suggests that a desideratum at the present moment is the standardizing as far as possible of the kind of technique that each major study should produce. When this is done it will be of value to consider the correlations between results obtained by the same students in different subjects. Until this standardization is effected, until, that is to say, we know exactly what we mean by Latin, or geography or science, the correlations that we obtain between these subjects have little meaning.

Some Remarks on the Greek View of Education.*

By J. B. BAILLIE.

THOSE who are engaged from day to day in the occupation of teaching, most particularly those whose vocation it is to teach others how to teach, cannot too frequently return to the fountain head of inspiration for the performance of their duties. This lies, as we all know, in the clear consciousness of what the aim is, or, rather, of what the aim ought to be, when one person assumes the responsibility of educating deliberately another mind. It may be better to travel hopefully than to arrive ; but we cannot even travel hopefully unless we know where we are going. Without some vision of the far distant country the road becomes tiresome, the dust of the highway depressing, and the creak of the caravan a jarring discord. In these days especially when the machinery of education is increasing in complexity, and when the magnitude of the administrative problems is enlarged by the expansion of interest in education, the one thing needful tends to be neglected because attention is cumbered by the many details of daily routine. There is no call for our making excuse, therefore, in devoting a little time at this conference to the consideration of the chief end of our vocation as this was understood by some of the wisest minds of one of the greatest nations the world has ever seen.

The higher life of Europe has for centuries been dominated in different ways by the thought and the literature of two small nations—those of Greece and Palestine. The religious life of Europe has been deeply permeated by the literature and history of Palestine. The main stream of scientific and philosophical thought goes back to the well-springs which first broke forth in Greece.

It would, I suppose, be generally admitted that the Greeks have by their own resources contributed more knowledge of a lasting kind on more subjects than any other single nation. Their views of nature, human nature, and super-nature, have largely controlled the educational institutions of Europe. Their influence in the domain of science has been unrivalled. Knowledge in the wide sense of clarity of thought was for them a supreme passion. To find out some new thing, to understand it, and to communicate it—this seems to have been, and was, indeed, held to be, the chief interest and object in life. It is but reasonable, therefore, to expect that in the reflective literature of such a people we should find a good deal of attention given to education—the process of acquiring and communicating knowledge, whatever the kind of knowledge may be. And, indeed, we do find that the masters of those who know attached a supreme value to knowledge as a condition of human well-being, and a supreme importance to the practical art of education.

It is significant to note at the outset, however, that the great writers produced nothing corresponding to what we should call a theory of education in the sense of a systematic analysis of the mental processes involved in imparting and assimilating knowledge. In the classical treatises which deal with the subject—Plato's " Republic " and Aristotle's " Politics "—education is discussed as an aspect of social and political theory. The same remark holds goods, I think, of so practical a manual as Xenophon's "Cryopædia," familiar to some of us at the early stages of our acquaintance with the classics. To Plato and Aristotle certainly education appears simply as a branch of practical politics, comparable with, say, sanitation or public administration. The question being raised, how are you to produce citizens of the right type? The answer is: by putting them through such and such a training. The description of this training constitutes what they mean by education. From first to last the ways in which the citizens are to be trained, the stages of the training and the subjects taught at each stage, are governed by the prior conception of what political life—that is, life in a community—is or means; and this prior conception is arrived at after a philosphical analysis of the city state with which the Greeks were familiar.

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* An address given to the Training College Association, at the London Educational Conference on 7th January, 1926.

This is the first point, therefore, to notice, and it is not only of interest but in certain respects of profound importance to ourselves. It means at least three things. It means (1) that education is nothing but the process or the condition of ensuring good citizenship; (2) that education is essentially a moral process, for morality is just the way in which human beings live together and life in a community is the most obvious way in which they do live together; (3) it means that education is necessary for everyone who is to enter into and share a common life with others.

While it may be said that we all accept these propositions nowadays with more or less conviction, it can hardly be maintained that we fully act up to them or realize their full import. The last of the three propositions is doubtless so far admitted in our time that it has become an incontrovertible commonplace amongst all intelligent people. Few if any would seriously dispute the statement that education is necessary for everyone. Since the Education Act of 1870 in England the need for the education of all has been accepted as a truism of public life. But it is doubtful if the real inwardness of this principle of public policy is even yet properly understood. For we still find not infrequently expressions used which suggest that education has to be provided as a sort of concession to an urgent demand for a hazardous and certainly expensive kind of social improvement; or that it is provided as a privilege or a form of charity; or again that it is a means of increasing the business efficiency of the individual; or, to take another phrase, that it is a way of securing what is called equality of opportunity for all classes of the community. None of these expressions of what is involved in the proposition we are considering brings out the central fact emphasized in the Greek point of view, namely, that whether the individual admits it or not, whether the State proclaims it or not, no individual can be what he ought to be, can be all he should be to the community to which he belongs, unless he goes through a process of education. The nearest we get to this position is in a statement sometimes put forward that the individual has a right to education, as if it were merely one particular right amongst others, and the State is under obligation to meet this claim and provide education accordingly. But even this is only half the truth contained in Greek thought; for the Greek view implies that a man's whole good, all his duty and all his happiness depend on passing through the process of incomplete to complete citizenship which is true education. I think it will be agreed we are still a long way from this view.

Let us now consider the other implications of the Greek view—that education is a process or condition of securing good citizenship and is, therefore, essentially a moral process, since for the Greek mind good citizenship and a good life involved one another, indeed were almost identical. Here, again, much of our current thought about education is in agreement with this doctrine, but seems only half convinced of its truth. To Plato, if we take the argument of the "Republic," and to Aristotle, who follows him very closely, the best life is only to be formed if the individual is trained to play his part in, or to fit himself into, a well-regulated self-sufficing city-state. Man is by nature made to live in such a community; by nurture he is gradually fitted to share its life to the full, and in so doing finds his own fulfilment and complete well-being. Nurture is the process of transforming his original undeveloped nature into his second or developed nature. The discipline of the body (through gymnastics), the discipline of the emotions (through music and poetry), and the discipline of the intellect (through scientific knowledge), were each to be directed by the one end, and for the sake of attaining this one end of harmonized citizenship. There was to be a place for every man and every man had his place according to his capacity; while the kind and degree of training was determined accordingly—all by reference to the same end. In the result there was a balance of parts in the community, a satisfying good for each, and a supreme good for the whole. Nothing else was worth living for. And the individual apart from this was not a human being at all; he was, in Aristotle's phrase, either a beast or a god.

On this view, it will be seen, education has not only an ethical value, which we all admit; it is not only unsatisfactory if severed from moral issues, which many maintain; but on the Greek view it has no interest, purpose, or content which is not directly derivable from and justified by the social, *i.e.*, the moral welfare of man.

Stated in this way, the doctrine may perhaps seem to most of us rather extravagant. But is it so? The reason for hesitating to accept it is, perhaps, partly that we are not so sure of man's moral end as Plato and Aristotle seemed to be, and partly that we have come to look on the moral life in a different way from what was commonly accepted by a typical Greek. We can see how Plato and Aristotle were so sure of their ground. To them the city-state provided all that man wanted for a full and complete life. It was small in size and definitely circumscribed; it was, therefore, comprehensible both in fact and in its ideal principle. And by the time at which they wrote it had reached a glorious consummation, a splendour of civic achievement which could justify all that was said of it in the well-known speech of Pericles recorded in Thucydides. It was fairly easy for them to give intellectual or philosophical expression to a moral ideal thus visibly and vividly placed before their eyes. But we are not, and perhaps cannot be, so confident of what the supreme good of man consists in or where it is to be found. For one thing, while we feel that the chief good must be permanent and universal, the city-state with all its glory has passed away as everything that has a history in time must do, no matter how beautiful. For another thing, the moral life has become far more complicated through the growth of the nation state, and the state imperial, through international intercourse between vast communities, through the expansion of what may be called moral toleration, and not least of all through the influence of universal religions on the conception of the nature and value of man's life.

But in spite of all this, the Greek view of education seems to me in principle true for us to-day as it was when it was held by its interpreters. In the first place it does seem impossible to justify the effort, the expense, and the severity of the discipline involved in all education, unless the process is carried on solely in the interests of and for the sake of the civilization of man. But man can only live a civilized life in some kind of civitas or community of his fellows. And the better educated a man is the more he needs, the more he depends upon, and the more he is called upon to play his part in some human society; and conversely, the more a society is civilized the more it requires its citizens to be educated. No man lives to himself, and no man can live his best at all unless in permanent and constant fellowship with his kind. Education, therefore, must be and can only be justified by its end, and its end is complete or better human association. Education, like wisdom, must be justified of, and literally in, its children; and children, from the start, enter into a heritage of citizenship, and are brought through the process of education into full possession of and control over their heritage.

In the second place, there is a strain of thought in both Plato and Aristotle which seems to lead them beyond the confines of the city-state upon which their minds were primarily fixed as the limit of human good. It is possible that this may have been due to their sense of the imperfections of the actual city-state as distinct from the city-state at its best. Both held that there was a lower and a higher level of the good life, and that the higher level is to be found in the pursuit of contemplation or theoretical activity for its own sake. This could not be carried on outside or independent of the life of a community; but it was a distinct activity by itself; and it implied all the others, was the best form of human life possible, and was reserved for the few who could rise to it. I have not found any successful attempt made to harmonize this doctrine with the main thesis which they advance. It introduces a suggestive but, as it seems to me, an inconsistent element into their theory. I cannot, however, discuss this point fully. For the present its interest for us consists in the indication it affords that the actual moral order of a society does not supply the whole of man's good, and that the maintenance of the social order as it is found to be at a given stage in the life of a society is not an exhaustive expression for the moral life of the individual. We have not only to take society as we find it, but to make it better and guide it to a higher end not yet realized. This means that man can be conscious of what lies beyond his actual society, and that in becoming conscious of this he is finding and fulfilling his life quite as much—indeed, in a higher way—as in carrying out the social order in which he participates. Plato and Aristotle in different ways speak of this higher realm as the divine life, which partly transcends the human; and the way of attaining it is through contemplation or theoretical activity.

While these two forms of man's good are not opposed, and while the connection between them is not fully developed, it would, I think, be true to say that the more the activity of the highest life imbues and directs the lower plane of man's welfare, the more completely is man's whole good attained. The way to fulfil life at the lower as well as at the higher level is the way of mental discipline which we call education. Thus education, controlled by reference to the highest activity of man, is the pathway of human welfare at the lower level as well as at the higher, and, at the same time, leads, or may lead, from one to the other.

There can surely be little objection to this wide doctrine. It is, indeed, partially implied in much of our educational practice, and it has been in principle defended and expounded by some of the more thoughtful educationists of recent times. What is wanted is that all those concerned with education and desirous of some steady light of inspiration for their work should set themselves to understand its full significance. We may agree that the actual society in which we live is far from supplying the fullness of satisfaction man demands in the name of human welfare. This, however, means no more than that individuals are incompletely adapted to one another, do not, as yet, understand each other properly. All the more necessary is it that means should be adopted for increasing fellowship, and thereby improving human relationships. Education is the only known means of bringing this about, and it has no other object in view. If we say that we are not fully aware of the end to be attained, we should remind ourselves that as with truth so with goodness, we find the best by doing all the good we can. Just as by knowing accurately we discover the larger truth, so by doing good acts we find out the fuller nature of goodness, and this enables us to do better. Moreover, it is true for us as it was for Plato and Aristotle that theoretical activity *is* the clue to the right path in education. For theoretical activity in their sense includes what we call scientific activity as well as the humanities in the widest meaning of the term. We need not exaggerate the importance of one of these to the depreciation of the other. Each in different ways gives access to the light that lightens every man who comes into the world. By this common light men understand one another, understand the world to which they belong, and thus live in fellowship with one another. Surely this is the familiarly accepted doctrine of all who reflect on the process and aim of education.

May I add one further remark. Plato and Aristotle both maintained that the cultivation of theoretical activity was a way of sharing the divine life, and that the direction of human relationships by theoretical activity—*i.e.*, education at its best—was the way to infuse human affairs with the divine. We may express such a view in a different language; but the same idea is familiar to us in another way when we say that man's life at its best is the conscious incarnation of the divine, that man is most fully man when he shares the divine life, that if we know the truth, the truth will make us free, and that where the spirit of the Lord is there is liberty—liberty to be ourselves and to share that liberty with others. Once again I ask is this not still and always what education properly understood has in view, and in all its processes should seek to accomplish? If not, I greatly doubt whether it is worth all the labour we spend upon it and all the self-sacrifice it entails. If it be true, however, have we not in such a doctrine a permanent source of inspiration for all our efforts, however incomplete our results? All born schoolmasters have felt this in some form or another; and no schoolmaster really counts unless he, like the poet, is born for his vocation. Those teachers only will leave their lasting impression on their pupils and on their age who feel something analogous to the state of mind of the reformer, the missioner, the enthusiast for beauty and truth, and who remind themselves every morning that they have great things to accomplish.

An Investigation into the Development of the Moral Conceptions of Children.

BY EVE MACAULAY AND STANLEY H. WATKINS.

PART I.

OUTLINE OF INVESTIGATION.

SOME important questions relating to children's morals have recently been receiving attention. In America Vernon M. Cady* has worked " to find to what extent it is possible by means of the test method, supplemented by character ratings, observational data, and other aids, to identify, in advance of overt delinquency, children of abnormal moral tendencies." His investigation was, to a certain extent, inspired by one of Paul F. Voelker†, whose general aim was " to try and find a secure basis upon which a broad program of social education might be built." His investigation fell into three parts : first, an enquiry as to what were the generally accepted objectives of social education ; second, a consideration and interpretation of certain widely approved and understood methods of teaching, and, third, an investigation as to whether moral, civic, and religious standards of behaviour can be inculcated by certain methods of teaching. He used reliability tests, supplemented by an account of the methods employed and the results obtained in training two groups of Boy Scouts. These were trained under the usual Scout Law, but especial emphasis was laid on " The ideal of trustworthiness." In England Dr. Cyril Burt‡ has carried out investigations into the environmental and hereditary conditions, and the physical and psychological characteristics of certain juvenile delinquents. He notes that the defective and the very young may not have sufficient intelligence to understand what are crimes and what are not, but he does not attempt to trace the development of a child's conception of wrongdoing. Several inquiries§ have been made as to the relative order of wickedness which children assign to different offences, but no one appears to have investigated how this order changes with age and social conditions.

The object of the present enquiry was to obtain information on some general aspects of this question. These are (1) The effect of environmental and other influences upon the development of the conception of moral values ; (2) What changes, if any, take place in such conceptions with increasing age ; (3) The degree of correlation, if any, between the child's conception of moral offence and his moral ideals, as shown in his choice of an ideal character.

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*" The Estimation of Juvenile Incorrigibility." *Journal of Delinquency* ; Mono., No. 2, 1923.

†" The Function of Ideals in Social Education."

‡*The Juvenile Delinquent*, 1925.

§*See* op. cit., pp. 405, *et seq.*

A survey was made in schools all situated in the same city, and care was taken to include schools that represented each of the more important social or economic groups in an urban population. These schools fall into four classes, and the number of papers received from each is as follows :

(A) *Boys' and Girls' Schools in a Slum Area.* 420 papers.

The houses in this district are large, but very old tenements, many of the buildings dating from Tudor times. No water is laid on in the majority, and the sanitary arrangements are very bad. Several families live in each house ; sometimes all the members of a family live together in one room, and few occupy more than two. The fathers are chiefly casual labourers of the most unskilled type, and many of the mothers are out during the day or the night, working to augment the slender income. About one-third of the children who wrote papers in this school are illegitimate, and there is much open prostitution in this part of the city.

(B) *Boys' and Girls' Schools in a Semi-Slum Area.* 416 papers.

Many of the children in this school live in courts, but of a fairly good type, opening into a wide main street. The houses are small, dark, and generally without water laid on, but they are not seriously overcrowded. Some of the children come from quite good homes. The parents are very small shopkeepers or better-class labourers.

(C) *Boys' and Girls' Schools in a Good-class Artisan Area.* 434 papers.

These children come from the typical modern suburban small villa residences. Most of the houses have been built within the last twenty-five years, and are each occupied by only one family. The fathers are shopkeepers, clerks, tram and 'bus drivers or skilled artisans.

(D) *A Secondary Girls' and two Secondary Boys' Schools.* 563 papers.

The majority of these children are scholarship children of fairly high intelligence, though in one of the two boys' schools, which has many fewer pupils than the other, most of the boys are fee payers from better homes.

To obtain information on particular aspects of the question the work was also undertaken in :

(E) *A Private Girls' School.* 76 papers.
(*F*) *A Rural Boys' School.* 127 papers.
(G) *University Students.* 90 papers.
(H) *Training College Students.* 180 papers.
(J) *A School whose children are drawn from a neighbourhood in which drunkenness is very prevalent.* 114 papers.

The general lines of enquiry were limited to the third part of the problem stated above, namely :

(1) To ascertain the subject's conception of what constitutes moral offence ;
(2) To ascertain his ideals.

Much difficulty was experienced in arriving at the type of question best calculated to elicit unequivocal statements on these matters from the children, and preliminary experiments were accordingly made in schools other than those which had been chosen for the actual investigation.

Finally, however, the question : " What are the most wicked things anyone can do ? " was found to elicit definite statements of crimes, and in order to get conciseness was eventually adopted in the form " Make a list of the most wicked things anyone could do."

During these preliminary experiments it became patent that a certain amount of suggestion and of talking and copying was inevitable. As, however, only the general lines of development were being investigated this latter difficulty may be disregarded, especially in view of the fact that even work which is the combined product of two or more children has value as an indication of their joint views. When individual papers were analysed, care was taken to be certain that they were the unaided work of the writer. During the preliminary experiments the children also showed a tendency, when they had to give their names, to write what they thought their teachers would expect, but this was almost entirely eliminated in the actual experiment, where they were told not to write their names, and were assured that the teachers would not read their papers.*

Finally it was found that the children of from seven to eight years old must have the question explained to them in general terms, and the older ones be given some idea of its importance in order to induce them to take it seriously. When these matters had been considered, type-written sheets were prepared for the teachers, on which were the following directions :

(1) Nothing is to be told the children except the type-written instructions. No questions, such as " Is stealing wicked ? " may be asked. If any child attempts to ask a question he must be stopped, if possible, before naming the offence.

(2) Distribute the papers, saying : " Do not write your names on these."

(3) Write the question on the blackboard, saying : " I am going to write up a question which I want you all to answer."

(4) Tell the children they may have as much time as they like.
If they are not certain how to spell a word they must spell it as it sounds, but on no account leave it out.

(5) No copying is to be allowed ; a note must be made when such cases occur.

(6) Before the papers are collected let the children write their Class, Age, and Date of Birth.

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*In one school, where a trial question was given, Standard VI wrote papers, giving their names ; Standard VII without so doing. The former class submitted a mixture of some recently issued " safety first " rules, extracts from hygiene and Scripture lessons and school rules ; the latter class gave a great variety of crimes culled from papers and their street environment, set forth with the utmost frankness.

(7) The instruction is: "Make a list of the most wicked things anyone could do.*"

The little children were addressed along these lines: "You all know what we mean when we say that a person is naughty or wicked, don't you? Yes, it means when they do something that they shouldn't. I am sure you can all think of things that you know are naughty or wicked, and I want you to make a list of these things for me."

In all the schools the children who were over the age of 14, and in the University and the training college the students, were asked to co-operate in an enquiry as to what crimes are considered to be of the worst type.

All classes in each group of schools did the work on the same day and at the same time, so that the children were unable to discuss the question with one another before answering it. Someone who thoroughly understood the importance of following the directions exactly was present in the room whenever the work was done.

Altogether 2,420 papers were received—1,264 from elementary school children out of an average attendance, for the whole city, of 6,281; and 563 from secondary school children out of an average attendance, for the whole city, of 1,060; 270 were written by students. The preliminary experiments were begun in November, 1924, and the statistical analysis was completed in May, 1925.

ANALYSIS OF THE RESULTS,

The first intention was to present a statistical survey of the results,† but this, it was found when the papers had been worked over, would be misleading, and of very little value; an entirely false impression would be given if the crimes mentioned at different ages were quantitatively set forth. It was necessary to take into account both the connection in which the offences were mentioned, and the words in which they were expressed. Thus, though you might find "false witness" given by quite a young child, it was generally coupled with "coveting" and "adultery." This is obviously a conventional reproduction of the Commandments, and one which forbids the assumption that the child realises the significance of what he has written as does the boy who says "telling things that are not true to get someone into trouble," "envying people who have things that you have not," "running away with another man's wife." In the same way the boy who writes "break in a shop. and rob the till," followed by "pickpocketing" and "swindling in business," looks at burglary from a very different angle from that of the boy who associates it in his list with "cannibalism" and "being a pirate." To the first boy it is a crime of experience, to the second a comparatively abstract event, something exciting and outside the course of everyday life.

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*The children were not asked to explain why they thought the offence named wicked, as this was tried in one of the preliminary experiments with very poor results. Much time was wasted, only about five offences being mentioned by each child in an hour. The reasons were all of the type: "Because God——" or "The Commandments tell us not to——"; "Because the police will catch us." "Because we shall be beaten if we do."

†A statistical analysis sub-headed according as to whether the offence given was (1) a conventional reference; (2) a general abstract term; (3) a concrete or detailed specification, will be presented with the second part of this paper.

The same kind of conventional reproduction is shown in the spelling by children between the ages of seven and nine, of words which they have obviously heard without having the least idea as to what they signify, or even exactly how they are pronounced. Thus, in a list of offences, most of which are spelt correctly or phonetically, there appear for "adultery" "douldery," "dudilty," and "dunty"; for "false witness" "fitness" and "falsters." It may still be urged that the children know what these crimes imply although they misspell and mispronounce them; but the most sceptical person could hardly fail to be convinced of the conventional and unquestioning attitude of the children if he had heard one of the standards of little girls, who wrote these papers, singing with reverent expression a hymn in which occurs this line:

> "The food we eat, the clothes we wear, are all bestowed by Thee."

This they rendered, collectively and individually, as:

> "The food we eat, the clothes we wear, are always stole by Thee."*

Since so much consideration was necessary to ascertain the significance of the crime to the child writer, the results are presented qualitatively, so as to demonstrate general tendencies and differences, with extracts from typical papers to illustrate certain points. The following is a general survey to show the field of crime covered by the children. It will be seen that almost every recognised form of wrongdoing is included. Part I, sections 1, 2, 4, 5, 7, 8 furnish 90 per cent. of the crimes given by children up to the age of 13. These are the conventionally accepted forms of evil. After 13 the personal crimes in Part III begin to appear more frequently, and after 14 those in Part I, section 3. Between the ages of 17 and 21 sexual offences form 76 per cent. of the crimes given. After 21 the tendency seems to be to return to the conventional crimes again. Every variation on any particular form of offence mentioned is included in this list, and certain crimes appear in two or more sections according to their significance to the writers of the original papers.

LIST OF CRIMES.†

I.—*Crimes against Person and Property.*

(1) (*a*) *Murder,* which includes capital punishment, matricide, fraticide, killing children, starving children to death, hanging, shooting, drowning, suffocating, strangling, garrotting, beheading, poisoning, crucifying, suicide.

(*b*) *Torture,* which includes breaking on the wheel, tearing limb from limb between wild horses, burning at the stake, burying a man up to the neck in mud and letting ants eat him, rolling people down hill in a keg stuck full of nails, burying alive.

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*Several children in the class (Standard I) were, in fact, asked to repeat the line, nor did any child offer an alternative when the class as a whole was asked.

†This list may be compared with that given by Cyril Burt. Op. cit., pp. 15-16.

(2) *Mutilation and wounding*, which includes blinding, maiming, cutting off noses, ears, eyelids and fingers ; cutting or tearing out tongues, tearing out eyes, finger nails and toe nails ; disfiguring people, throwing vitriol, scalping, dismembering dead bodies, stabbing, breaking arms and legs, cutting open heads, throwing people down stairs, hitting with a heavy club, assault and battery, wounding, fighting with knives and bottles.

(3) *Sexual offences*, which include adultery, bigamy, divorce, free love, seduction, assaulting girls and women, fornication, incest, self-abuse, exhibitionism, incontinence, prostitution (given only by women), being the first to set a woman on the downward path, betraying and deserting an innocent girl, kidnapping (ascertained to refer to several recent cases of children being kidnapped and assaulted), homosexual intercourse, indecency, telling—or listening to—dirty stories ; bringing illegitimate children into the world, marrying for money, going with bad men, flirting, fooling with girls, trying to attract male attention, being a lover when young, kissing, thinking about members of the opposite sex, betraying girls.

(4) *Theft*, which includes robbing the poor, aged or helpless, burglary, cat burglary, fraud, embezzlement, forgery, coining money, robbery with violence, false pretences, profiteering, robbing street barrows, robbing tills, impersonation, larceny, petty theft, shop-lifting, trespassing, poaching, firing ricks, damaging houses, fences, clothes, etc, ; owning slum property, eviction, miserliness, coveting, selling quack medicines, fortune telling.

(5) *Small offences against the person*, which include hitting, punching, fighting, slapping, kicking, pricking, pinching, scratching, knocking, pushing, pulling, digging (with elbows), pulling hair, spitting, tripping, fouling, bumping, being rough, bullying, biting.

(6) *Offences of speech*, which include swearing, scandal, gossip, slander, libel, anonymous letter-writing, calling names, saying " fool," false witness, taking away people's characters, hypocrisy, saying one thing to a person's face and another behind his back, telling lies about anyone to do them harm, telling indecent stories, saying cruel things to hurt people's feelings, speaking roughly, bragging, boasting.

(7) *Street offences*, which include gambling, stone-throwing, street-fighting, runaway knocks, breaking lamp posts, calling after people, riding behind motors, running behind carts, cheeking the police, furious driving.

(8) *Offences of adventure*, which include piracy, smuggling, rum-running, being a highwayman, card-sharping, gambling, horse racing, welching, being a motor bandit, pillaging, plundering, derailing trains, wrecking ships by showing false lights, burglary, arson, forgery, embezzlement, keeping slaves, cannibalism, doing tortures. Also various war crimes, such as torpedoing ships, using poison gas, bombarding undefended towns, firing on the Red Cross, killing civilians, spying, treason, killing the King, plotting against your King and country, disloyalty, rebellion, rioting, striking.

II.—*Offences against Religion.*

These include atheism, unbelief, idolatry, denying God, mocking God, turning from God when you believe in Him, blasphemy, sacrilege, robbing, destroying or damaging the Church, destroying or injuring the Bible, destroying or injuring a Prayer Book, laughing, talking or playing in Church, not praying, working or playing on Sunday, being afraid of, mocking, or praying for the dead, worldliness, believing in or listening to Satan.

III.—*Offences against Parents and Acquaintances.*

These include disobeying, disturbing, being rude to, cheeking, injuring, not providing for, not helping, being ungrateful to, robbing and killing—parents, selfishness, lying, jealousy, vanity, ill-temper, sulking, grousing, grumbling, waste, extravagance, greed, spite, deceit, lack of self-reliance, not making the most of opportunities, laziness, sloth, parting friends or relations, lack of sympathy, being uncharitable, judging others, not being cheerful, cowardice, rudeness, snobbishness, carelessness, impertinence, cheek, slang, young boys smoking, bobbing and shingling hair, women smoking, women wearing reducing corsets,* breaking a promise.

Offences of little children : rushing about, slamming doors, putting elbows on the table, walking in puddles, climbing trees, lying on damp grass, going out without a hat, hiding another girl's clothes, snatching, being a nuisance, smashing things, fear of the dark, crying, worrying, teasing, putting out tongue, coughing in people's faces, striking matches, playing with fire, getting into mischief.

IV.—*School Offences.*

These include truancy, disobeying, cheeking, defying and worrying teachers, copying, cheating, talking, laughing, playing and eating in school, cheating in games, being unsporting, tale-telling, deceit, not owning up, cowardice, bullying, cheek, snobbishness, idleness, upsetting ink, making blots, tearing books, throwing papers on the floor, running in the corridors, shouting, screaming, roaring, writing on the blackboard, switching on the lights, upsetting chairs.

AGE DEVELOPMENT.

Several very distinct and characteristic stages of progress are noticeable in considering the papers from the standpoint of how the capacity to pass valid moral judgments develops with increasing years ; and it was found that, though the medium of expression varies according to the economic circumstances under which the child lives, yet the basic psychological facts are the same in all grades of society.

(1) The first stage, which extends to about nine years, is that in which the child lives in a small world of immediate personal relationships. Informed by no general moral principles he merely states as crimes those small personal acts which he has been taught to consider wrong by the

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*Given by three boys.

categorical prohibitions of his parents or teachers. At this age, therefore, he does not write down "stealing," "assault," or "disobedience," but gives a list of objects that may not be stolen, injuries he must not inflict, and rules he must not disobey. It is interesting to compare these results with the Terman Picture Tests, and to notice that, at this age, the children make no attempt to co-ordinate the different objects in the picture into a story. They enumerate the various things that they see, and give actions and characteristics, but that is all. This is also the period at which frequent mention is made of " mother " or " teacher." From seven to eight years of age " mother " is the predominating individual in the child's life, and the crime is " being naughty to " or " disobeying mother." She is mentioned by 24 per cent. of the little ones, whereas " father " is not named once by the slum children, and is only mentioned in schools B once, where " mother " appears seven times with children from schools C and D. After nine years " teacher " comes to the fore, a sign that the school influence is superseding that of the home, and that the child is issuing forth into a wider world. Mentions of " mother" fall to 6 per cent., and " teacher " rises from 2 per cent. to 16 per cent. The characteristics of this age, therefore, are, dependence on individuals, an intensely personal moral outlook, the result of this dependence, which is, however, entirely conventional, as it simply enumerates a series of prohibited actions, and is quite lacking in co-ordinating thought. The three following lists, from schools A, D and E respectively, are typical examples of this stage of development:

> A (boy, seven years).—Kick, steal a ball, kill a man, steal apples, steal oranges, bite, steal a piece of chalk, spit.
>
> D (boy, eight years).—Not to go to church, not to say your prayers, to be rude to mother, to do tortures.
>
> E (girl, eight years).—Put on the lights, roar in the corridors, believe in Satan, throw paper on the floor, I must not lie on the wet grass, disturb mother.

(2) Between the ages of nine and ten we see the beginnings of a quite distinct stage of development. First, the child learns to generalise. The particular offences which he described at the preceding stage give place to such generalised conceptions as " stealing," " murder," " fighting," etc. Secondly, this stage is characterised by an extremely conventional conception of moral offence, not the individualistic conventionality, however, of the first stage quoted, for the child now names the generally accepted forms of wrong-doing. But his outlook is, as yet, uncritical; he never, for instance, adds any mention of possible mitigating circumstances as older children frequently do. Thirdly, it is evident at this stage that the offences are no longer such as have any personal significance for the child; almost the only crimes which may seem to be directly relative to himself are " fighting," " bullying," " lying," and " stealing."

(3) The impression given by the papers of the 11, 12, and 13-year-old children is that they are thinking out into a great world which they can only know at second-hand, and that they are taking an immense interest therein. The child has by this time ceased to be concerned with himself as the chief object of his curiosity; the world as a whole absorbs much

of his attention, but not as directly relative to himself. From afar he appears to be surveying the field of his future activities, and he probably feels considerable satisfaction in its potentialities, judging from the number of crimes which need power and strength in performance that he recounts. " Embezzling," " smuggling," " jewel stealing," " forgery," " piracy," " being a highwayman," " making a rebellion," and such like crimes seem to indicate that the child projects a dissociated and imagined self into the " grown-up " world, where such excitements and adventures abound (*cf.* Ideals).* So far as a personal moral code is concerned, this age would seem to be the most amoral period of the child's life ; if crimes of the spirit† appear at all they are mentioned with no semblance of conviction ; there is no attempt to put them into his own words, no evidence that thought has been devoted to their meaning and import. The following lists show the mixture of " grown-up " and conventionally recapitulated crimes which are characteristic of this period :

> A (boy, 10 years).—Murder, swear, tell lies, take God's name in vain, false witness, worship idols, be rude, commit adultery, make false notes, embezzle.
>
> B (boy, 11 years).—Murder, arson, pillaging, false witness, burglary, plundering, slavery, maiming, stealing, big jewel thefts.
>
> D (girl, 13 years).—Disobey God's holy word, murder, steal, not to do to others as you would they should do to you, dishonour one's parents, pretending to be someone you are not.

(4) At about 14 begins the manifestation of adolescent growth ; this period appears to extend to the age of 19 or 20, and is so varyingly revealed that it is difficult to give representative lists, and general statements must suffice.

The earliest noticeable characteristic appears to confirm the contention of Dr. Ernest Jones‡ that, between 14 and 16, there occurs a period of homosexuality in which the child withdraws again into the self. During these two years crimes of violence, but now of a more serious nature, re-appear in the lists. " Stabbing," " wounding," " maiming," " disfiguring people," " breaking limbs," are given by boys ; whilst the girls mention particularly " stabbing," and, in one or two instances, " throwing vitriol " as crimes.§ In this connection, particularly as physical sexual development now begins, it is interesting to note that Freud suggests that " stabbing " and " throwing vitriol " are symbols for sexual assault, and that the fear of " maiming," " disfigurement," and of " breaking limbs " are indicative of a dread of castration. Both sexes, though the girls more often than the boys, give " conceit " and " vanity " for the first time. This may well be indicative of the child's renewed interest in the changing and developing self : such crimes appear only in isolated instances before and after this period. The inference to be drawn is that, just as the young child learning himself and his physical power for the first time, gives minor offences against the person, so the older child, undergoing a similar experience, thinks in similar terms. Another crime which appears in the boys' papers between the ages of 13 and 15 is probably connected with this homosexual period—this is "to strike a girl." This cannot be simply the development of a chivalrous attitude towards women, for actual fighting between boys and girls generally ceases at 12 years old, it certainly does not occur after 14. Probably, then, as Stanley Hall writes in "Adolescence," the withdrawal into the self which takes place at this age is accompanied by a faint sex antagonism, and hence we have the mention, prompted possibly by a repressed impulse, of the offence "to strike a girl." It is certainly a period at which girls and boys draw apart somewhat; the 14-year-old boy affects to be interested only in games, the girl of the same age thinks boys "stupid," and talks frequently of a career and "never getting married." This must be the age at which Dickens makes David Copperfield write: "I am higher in the school now, and no one breaks my peace. I am not at all polite to the Misses Nettingall's young ladies, and shouldn't dote on any of them, if they were twice as many and twenty times as beautiful. I think the dancing school a tiresome affair, and wonder why the girls cannot dance by themselves and leave us alone. I am growing great in Latin verse and neglect the laces of my boots."

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*Part II of this paper.

†By this is meant such crimes as hypocrisy, selfishness, greed, cowardice, etc., as opposed for example to crimes of " violence."

‡" Some Problems of Adolescence." *Brit. Jnl. of Psych.*, 1922.

§cf. Burt. Op. cit., pp. 215-17.

At this age also appear signs of adolescent unrest: both sexes mention in their lists "running away from home" or "from school." It also seems that there are vague aspirations to impress one's personality on the world by doing something great or startling. Such phrases as "fanatics imposing their views on the world," "leading others astray," and "using your influence to make others do wrong," occur in several papers at this age.

The conflict between home discipline and the child's growing desire for freedom, which begins with adolescence, is shown by the revival of offences against the parents. These have entirely died out by 10 years old, being after nine years only of the "disobey one's parents" or "be rude to your parents" type. The occasional mention of "dishonouring, parents" between 10 and 14 may be practically discounted as being a typical conventionally stated extract from the Commandments. After 13, however, "to disobey your parents," again figures fairly frequently; towards 15 this changes to "being rude, insolent or ungrateful to your parents." About 16 such crimes take the form of "despising" or "hating your parents," and, at this age, also, girls give in several instances "matricide" and boys "patricide" in this or synonymous forms. This may mean, of course, that the child devoted to the parent does really consider patricide the worst crime, but—to look forward for a moment—it is significant that no child who mentions such a crime chooses the parent as an ideal character; further, no girls give patricide, and only one boy "to kill one's mother."* By 19 the more serious trouble between parents and children appears to be over; the young persons have broken free from the restraints of home, and definitely asserted themselves as men and women in their world. The chief crimes of this type are now "thinking oneself better than" or "despising one's parents," "not being grateful to your parents for all they have done for you," and, amongst boys and young men, "not providing for your parents in their old age."

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*Note in this case the personal form of the expression. The inference is that this is a manifestation of inter-sex antagonism, and that the sub-conscious revolt against the prohibiting and circumscribing parent expresses itself in the contemplation of his or her imagined decease. The ideal of the boy who gives "to kill one's mother" as a crime is very interesting in this connection: he chooses St. Paul as his ideal (in himself a distinctly anti-feminist character), and because "he was free, determined, able to travel where he liked, and he always spoke out fearlessly."

The first signs of breaking away from conventional, uncritical morality occur soon after 14, and are chiefly concerned with the crimes of "murder" and "stealing." These still continue to be the offences most frequently mentioned, but they are now qualified thus: "Murder, excepting in self-defence," "cold-blooded murder, murder done in the heat of the moment is not so bad," "stealing, but, of course, not if your wife and family is starving," "lying, unless with some good object, such as a doctor not telling a patient how ill he is."* By 16 more definitely individual points of view appear: "Murder and killing (as in war)," "murder, in which I include the capital punishment of a man who has committed one," "swearing, if seriously meant." Three somewhat precocious children, one girl and two boys, write at this age: "Nothing is wrong unless you think it is."

There is a marked diminution in the number of legally punishable offences given after 14, whilst, excepting with obviously backward children, the sensational "piracy" and "smuggling" disappear entirely. The places of these are taken, between 15 and 16, by what may be termed sins of the spirit—"selfishness," "hypocrisy," "not making the most of one's opportunities," "cowardice, moral and physical." One legally punishable crime, however, shows a great rise. This is suicide. It is not mentioned before 11 years old, and is then given, up to 14, by 3 per cent. of the children; at 15 it is given by 23 per cent., and at 16, the highest point, by 30 per cent. It is interesting to study in this connection the number of deaths from suicide per 1,000 of the population of England and Wales for the year 1922-23, for the age groups 5-10, 10-15, 15-20:

Age Group.	*No. of suicides per* 1,000,000 *per annum of population.*
5—10	0
10—15	8
15—20	51

The numbers of children giving this offence fall after 16 until at 19, and from then on until 28, it is only mentioned by 10 per cent. The year between 15 and 16 appears to be the most stormy period of adolescence; this is shown more particularly in the ideals papers. In them the percentage of blank sheets handed in is higher at that age than at any other, and the tone of the papers is often defiant. It is at this age, as has been said, that patricide and matricide are mentioned in the lists of crimes. It may be, then, that many children, feeling neglected and misunderstood, may contemplate suicide in some vague fashion at about this time; perhaps as a way out of their difficulties, but more probably with the idea that if they kill themselves their people will have to take notice of them.

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* *i.e.*, It is not the concrete offence as such, but the breach of some rational and recognized code of moral principles.

This point was discussed with several young adults, who admitted that they sometimes had thought at about this age, when they had troubles at home, "I've a good mind to kill myself and then, perhaps, they will be sorry."

Sexual offences gradually come to the fore from 14 years on, until, between 17 and 20 years, they head the list. The young adolescent generally gives "running away with another person's wife, or husband" and "bigamy," but otherwise says nothing about such offences. (This is discussed more fully in another part of the paper.) At the age of 16 comes a period when boys and girls are evidently beginning to think—for the first time—definitely about particular members of the opposite sex, as such.* Girls give, at this age, as offences "flirting," "being silly with men," "trying to attract male attention;" and boys write "thinking about members of the opposite sex," "being a lover when young," "fooling with girls," and "betraying girls." Some of these offences are so very venial, indeed natural, that it seems pathetic that the children should regard them as faults, probably with grave consequences to their peace of mind.

"Bigamy," "adultery" and "divorce" are the other sexual offences most frequently mentioned up to 17 years. These appear to be conventional statements of offences which have no more real significance to the writers than "murder," "piracy," and "forgery" have to 12-year-old children. From 17 on, however, though they still appear and probably have now a definite import, they gradually give way to crimes of personal self-indulgence in these respects. These crimes are almost certainly given with real understanding of what they imply. 90 per cent. of the men and boys give two or more of these crimes between the ages of 17 and 20, and 51 per cent. of the girls. It is worth noting that, excepting with little girls of about 10 in the slum schools, a smaller percentage of girls at all ages mention sexual offences than of boys. At the same time, when they are given, the girls tend to give more instances than boys. The reticence is probably the result of the convention of the middle-class homes from which they come, where such matters are sedulously avoided and covered up.†

The sense of responsibility to their fellows develops with girls at about 14, and with boys a year later. It is exemplified in frequent mention of "leading others astray," "not protesting against wrong-doing," "setting a bad example to those younger than yourself," "not trying to help others," "when a fellow is down not giving him another chance." The conception of civic responsibility as a matter of personal experience appears with boys at 15, and with girls about a year later. The crimes given are "deserting your country," "not serving your country," "owning slum property," "not trying to better the condition of the poor," "profiteering," "keeping rents high," "not obeying the laws of your country," or "of society."

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*Hadfield. *Psychology and Morals*, pp. 108.

†The following are typical examples :

Boy (14).—Smoking, bullying, lying, cribbing, flirting whilst a boy at school, strike a girl, swearing, stealing, contempt of King, strike one's mother.

Girl (14).—Murder, steal, slander, commit adultery, drink, false pretences, assault a girl, for a man to abduct a girl, scorn God, for a man to ill-treat his wife.

The conception of the self rather than public opinion as the moral arbiter develops very slowly, and is not often expressed in actual words even by adults. Ten per cent. of the writers over 18 say " offending morally is to do deliberately what you know to be wrong " ; but, on the whole, the tendency is to give a short list of the offences most generally banned by society and then to say that on other matters the individual must be his own judge.

The following lists are not the work of any special individuals, but they have been compiled on the basis of frequent mention, from actual crimes given, so as to try and give lists representative of the three stages of adolescent growth :—

> Boy (14).—Murder, steal, break a person's arm or leg, stabbing, selfishness, cowardice, to strike a girl, not to consider your parents, lying.
>
> Boy (16).—Patricide, ordinary murder which is premeditated (it is not so bad if done in the moment of passion), adultery, suicide, fooling with girls, not to give a fellow who is down another chance, theft, profiteering, lack of self-reliance, lack of charity, bragging.
>
> Boy (18).—Deliberate, cold-blooded murder, theft—of another person's property or good name, throwing away your health in illicit sexual intercourse or in drunkenness, self-abuse, despising your parents or anyone inferior to yourself, to judge anyone, not playing the game in the widest sense of the word.

Social Distinctions.

In every grade of society, and at every age until 18 years old, " murder," " stealing," and " lying " are the crimes most frequently mentioned ; but when these have been separated out distinct social differences appear. It is plain that the slum and the semi-slum child matures young. He is soon conscious of society and of the struggle for existence ; also, he has, with the possible exception of " murder," a first-hand knowledge of the legally punishable offences which he names. This is plainly shown in the character of the lists. The crimes, " selfishness " and " not helping others," which appear in the lists of better-class children soon after 12 years old are very seldom mentioned by children in Schools (A) and (B) even at 14. This does not imply that the elementary school child has not these virtues equally with the secondary, but probably his attitude is more practical ; he realises that charity must begin at home, as it were, and that he will " go under " if he is indiscriminately unselfish.* It is more than likely that he really knows as well as the better-class child what true unselfishness is, but he talks less easily and glibly about it. In regard to knowledge of life, the slum child of about 10, practically speaking, is an adult. As has been said, the wording and arrangement of his list of offences shows that he knows quite well the

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*In the choice of ideals, children from the slum schools often give as reasons for their choice " The possession of food," and, in the case of girls, " Clothes." In the schools of the better class the reasons are " The possession of wealth and power."

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significance of what he is writing. The list of a 14-years-old child in Schools (A) or (B) usually contains about 15 offences, and consists of every known variety of fraud and violence; in School (D) the boy of this age rarely gives more than eight offences, of which the legally punishable crimes are most frequently "arson" and "burglary," which he couples, not as the slum child, with "breaking lamp posts," "smashing windows," "picking pockets," and "robbing barrows," but with "blowing up bridges," "sinking ships," "rum-running," "being a pirate," and such like crimes. All of them are equally outside his actual experience—crimes of adventure culled from his reading. Further, he quite frequently mentions as offences "greed," "cowardice," "not helping others," "breaking your word." Eighty per cent. of 14-year-olds mention one or more of such or similar offences in Schools (D) as against 19 per cent. in Schools (A) and (B), and 27 per cent. in Schools (C).

Again in most cases up to the age of nine the elementary school child gives a great number of small offences against the person, "kicking," "punching," "biting" and "scratching"; whilst the better-class children turn to books to make up their lists, and write such things as "making holes in the dykes in Holland," "being a cannibal," "wrecking trains," and "throwing bombs." Books also appear to supply the descriptions of various tortures inflicted by Red Indians and the Inquisition, in contemplation of which the secondary school child doubtless overcomes the temptation to "prick," "pinch," and "dig," actions which his social code forbids, but in which the elementary school child, from the age of seven to nine years old, seems to indulge frequently. It is possible to present figures, based on between 400 and 500 papers received from each set of schools, which show how the tendency to mention small personal offences dies out as the social scale ascends. These figures are of the number of children per 100 in each school who give one or more of such offences. To make the comparison more real only the children up to 14 have been included from Schools (D).

Small personal offences.

A	B	C	D
(slum).	(semi-slum).	(villa residences).	(secondary).
420 papers.	416 papers.	434 papers.	385 papers.
71%	38%	13%	3%

Taking only the children up to the age of nine in each of the four sets of schools the figures run:

A.	B.	C.	D.
138 papers.	127 papers.	149 papers.	45 papers.
100%	86%	23%	6%

In the same way the variety given diminishes gradually, dwindling from hitting, punching, slapping, fighting, kicking, pricking, pinching, scratching, digging, pulling, pushing, pulling hair, spitting, tripping, bumping, fouling, knocking in Schools (A), to merely kicking, tripping, fouling, slapping in Schools (D).

Varieties.

A.	B.	C.	D.
17	11	8	4

The following are representative papers, which show the contrast between Schools (A) and (D):

> A (boy, nine).—Kick, dig, pinch, steal nuts, put out your tongue to mother, kill a man, throw stones to a dog.
>
> D (boy, nine).—Kill a man, to listen to Satan, to be a robber, tripping, kicking.
>
> A (girl, eight).—Boys do spit, scratch, to steal a piece of chalk, a boy says shan't to mother, pinch, copy.
>
> D (girl, eight).—To run in the corridor, not to let people go to church, to slap a girl, to throw paper on the floor.

The figures for fighting are also presented, but it must be borne in mind that here there is a qualitative, as well as a quantitative, difference. In Schools (A) fighting means street brawling—" fighting when drunk," " women fighting," " fighting with bottles " and " knives." Such crimes are mentioned equally by both sexes. In Schools (D) it is simply called fighting, plainly the schoolboy's fisticuffs and little girl's quarrels; it is hardly ever mentioned after 14, whilst in Schools (A) and (B) it takes the place of " quarrelling " at about the age of 10, and is increasingly mentioned each year after that. The following figures are the percentages of children up to the age of 14 who give " fighting " as a crime:

Fighting.

A (slum). 420 papers.	B (semi-slum). 416 papers.	C (villa residences). 434 papers.	D (secondary). 385 papers.
52%	43%	19%	10%

The differing codes of honour which obtain in the different schools appear in the papers, and the crime " to be unsporting " given by boys is of interest. In School (A) it does not appear at all; in School (B), where the head master tries to instil the ideal of sportingness, it is mentioned by 20 out of 50 boys in Standards VI and VII, always in the set phrase " to be unsporty." In Schools (C) it is mentioned by 12 per cent. of all the boys in the school, omitting Standard I, and in such phrases as " not to be a sport," " to get waxy when you are losing," " to be unsporting," " not to be able to take a licking." In Schools (D) it appears in 64 per cent. of the papers, and in an even greater variety of expression than in Schools (C). It must be remembered that this ideal is largely inculcated on the playing fields; there are no football or cricket teams in Schools (A), both Schools (B) and (C) have such teams, whilst in the secondary schools there are, of course, organised games. Bearing this is mind, we see that in the semi-slum school the top standards give the crime " to be unsporty." This has a conventional ring, and though the boys are, in all probability, absolutely sporting in their games, their conception of the offence seems to lack the conviction and general application of the varied phraseology in which the boys of Schools (C) and (D) express this idea.

Two further offences which illustrate the code of honour are those of " telling tales " or " tits on people," and " breaking one's word." The interest in these lies in the fact that the first appears to be almost unthought of as an offence in Schools (D), and the second in Schools (A). The inference is obviously not that the secondary boy does not give tale-bearing as an offence because he condones it, but because it no more enters into his head as a possible crime than does embezzlement into the head of a little girl of eight. On the other hand, there is a slight difference in " breaking one's word." The unhappy slum child reared in an atmosphere of light regard for the truth does not recognise this refinement of lying as a fault. Reticence is impossible in closely-crowded homes, where reserve is not respected. If he promises not to betray a confidence it generally leaks out in one way or another, or if he says he will—or will not—do a thing, he encounters many obstacles in the way of performing his promise, and breaks his word almost perforce. In the better-class home there is more respect for a child's secrecy, and the statement " I can't tell you, because I said I wouldn't," satisfies a parent who feels that there is no harm meant. The following figures are, as before, the number of children per 100 who name the offences in each set of schools :

	A.	B.	C.	D.
Tale telling	36%	19%	10%	1%*
Breaking word	3%	10%	20%	38%

Familiarity with the offence and the degree of difficulty with which it is avoided also account probably for the fact that drunkenness is not mentioned as a crime in the classes where it is most prevalent.

The figures run, calculated as before :

Drunkenness.

	A.	B.	C.	D.
Papers........................	420	416	434	563
	5%	11%	20%	34%

An exception must be made in the case of School (J), elementary girls only, where the results show, in a startling manner, the effect of drunkenness upon the younger children. They are drawn from a number of squalid courts grouped about two public houses, the fathers are casual and very intermittently employed labourers, the neighbourhood has long had the reputation of being the most drunken in the city, and the noises at closing-time are terrific, and re-echo through the courts and into the small, low houses. The little children from seven to nine years of age seem to regard drunkenness not as a crime, that is as being loss of self-control on the part of the drunken, but as something which terrifies and frightens them. Thirty of the younger girls out of 50 wrote papers of which the following examples are typical :

> Girl (9).—When we are told to put out the tea cups and we won't. When little boys are rude to their mothers and other ladies. People goes and haves beer and whiskey and are took up to the police station, and are put in a dark cell and are tied up with thick ropes. When ladies fights with babies in their arms and the babies

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*All these cases came from girls.

> crys out loud, and the people do not stop. Men goes in pubs, and they gets drunk and comes home and hits things off the table. Little boys are sented to school, and they do not go.
>
> Girl (9).—Men and women gets in a rage, and put out bad language, and knock their children about. When children tell tales and spit. Boys go in shops windows and steal money and toys. Men go in the pubs and get drunk and fright us in the night, and they hurt their children. Children run away from their homes, and go with bad men.
>
> Girl (9).—Some men steal money in the night. Some men and women go in the pubs and get drunk, and they say bad words when they come out. Sometimes people go in and sing and go mazed (local for mad), and say wicked things in the night. When they comes home they has fights in the night.
>
> Girl (8).—Boys break windows. They might steal a pencil or some chalk. Men and women go into a public house and come home drunk, and they sing in the street and bump into people. Some children, if their mothers put money on the table, take it.*

These papers were original work, the children did not copy from one another, nor was any suggestion afforded the class. The contrast between these papers and the rest of the school is striking. After the age of ten drunkenness is only mentioned by two of the remaining 64 girls.

Amongst children up to the age of nine " stealing " as a crime shows a social difference according to the way in which it is given. In Schools (A) and (B) 75 per cent. of both sexes give it, in Schools (C), 50 per cent., in Schools (D) the little girls do not give it at all, and only 14 per cent. of the little boys. There is the further distinction that in Schools (D) the single word " stealing " is written; probably in a well-organised and sheltered home the child learns early to distinguish between " thine " and " mine," and little thefts are soon noticed and reproved. Further, whilst the stray taking of a lump of sugar or piece of cake in a poverty-stricken home is a real consideration, it is not regarded as a theft where circumstances are easier, whilst in Schools (A) the children under nine write, " stealing apples from shops " or " barrows," or of " stealing chalk," " pens," and " pencils " from teacher. Here shows forth the street morality, the child being afforded perfectly different opportunities for theft. The following extract from a School (D) paper shows how careless home surroundings conduce to theft:

> " If mother puts some money on the table and a boy steals it and then he says he did not do it, and mother thinks she did spend it."

" Stealing from mother " is a frequently-mentioned crime with elementary school children up to the age of 10.†

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*The style of these papers, which are so much better expressed than most Standard I lists, is due to the fact that the class teacher devotes much time to composition, oral and written. Her aim is " to get the girls to express themselves well in talking or writing."

† cf. Cyril Burt. Op. cit., pp. 83-84, note (*e*). He writes: ". . . In a needy home . . . where every penny and every fraction of a penny has to be jealously counted, the loss and wastage, however trifling, become matters for dire reproach and drastic punishment."

It is difficult to discuss with any feeling of security the social significance of sexual offences, for though the children, safeguarded by their papers being anonymous, appear to have written quite frankly on most subjects, there are almost certainly repressions over this type of misconduct. On the surface, it would appear that up to 14 years old secondary school children are ignorant of such sins; their only mention is of " adultery," which is generally coupled with some other recognisable extract from the Commandments. From Standard II on, in the elementary schools, various sexual offences are mentioned in terms which show that the children understand, not necessarily the import, but the fact of what they write, or, at least, are voicing the gossip and opinion of the neighbourhood. Thus a girl of nine says: " A man going in a room to a girl in the night," another ten-year-old says " for to have a baby if you are not married." Other examples from children under 12 are " to go with the wife of another man," " boys saying things to girls they did not ought." It is curious to notice in School (C), where several such offences are mentioned in like terms, that after 12 there comes unbroken silence on the subject of sexual offence, excepting further mention of the conventional " adultery " or " running away with another man's wife," or " woman's husband." It is probable, therefore, that the convention of the homes which refuses to admit the existence of sexual offences, at all events, in conversation, causes these repressions to arise when the child becomes old enough to realize, even vaguely, what these crimes imply; this, rather than lack of knowledge, may account for the secondary school girls' silence on the subject up to the age of 14. Again, amongst the children in Schools (A) who live, owing to wretched housing conditions and much poverty, amongst scenes of prostitution, coarseness, and illicit relationship, it is the younger children who give such crimes, and the older who are silent, though they must be fully aware of their existence. In this case the lack of mention is almost certainly due to the fact that what to the younger children are conventional and surface crimes, have already become to the older ones personal and subjective. The figures are as follows:—

Age	7—8—9	10—11—12	13—14
Papers................	138	203	79
% Age	4%	29%	8%

A curious difference appears between the Standard I and II girls in the elementary schools, and the children of the same age in the secondary and private schools. The children in the former schools usually ascribe the crimes mentioned to boys. This will have been noticed in some lists already given. The following lists are typical of 83 per cent. of Standard I and II papers written by girls:

> Girl (7).—A boy did break a cup, steal a top, boys do spit.
>
> Girl (8).—Boys do kick and make a noice and put out their tongues to ladies in the street, to kill a baby, to steal the sweets from a little baby.*

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*This child has a small sister of whom she is inordinately jealous.

> Girl (9).—Boys are very rude, they steal, they swear. The police catches them if they steal. To cheek teacher, to dig, some girls and boys will not go errands when their mother sends them.

The secondary school girl of this age speaks of herself as doing wrong, and her list is entirely composed of little home or school offences.

> Girl (8).—Climb trees, tear my frock, I must not pull pussy's tail, not to obey mother, to tell a lie.
>
> Girl (9).—Not to go to school, to hurt a cat, to talk in school, to bang the door, to be naughty.

The attitude of the poorer girl is probably one of sex revolt. The physically weaker girls suffer considerably at the hands of teasing and ill-disciplined boys. Mothers cannot ordinarily come to their rescue, and they have no redress for their grievances. Consequently, they grow up with a defiant attitude towards their tormentors. On the other hand, the small secondary school girl does not, as a rule, find her brothers so tiresome nor so badly controlled.

It is very striking to notice how entirely the memory of the Great War has faded in the elementary schools. Out of the 1,200 papers received it is only specifically mentioned once, by an eleven-year-old boy in School (B). This paper runs: " Murder," " steal," " blow up bridges," " to be cruel to animals," " in the war Germans put swords in babies," " to catch a house on fire," " swearing," " lying."

It will be seen that three of his crimes are of the nature which suggest visits to the cinema; incidentally, he chose Jackie Coogan as his ideal character. In the secondary schools the War is mentioned, up to the age of 14, that is, out of 885 children by 6 per cent., and between that age and 18, that is, out of 178 children, by 14 per cent. Such crimes as " torpedoing ships," " using poison gas," " killing civilians," " bombing undefended towns," show that the evils of war are still recalled in the middle classes and spoken of before the children, for, of course, the younger ones will not remember them personally.* They have probably not been forgotten by the lower classes, but the children are not familiar with them because they have not the books and papers which the secondary school child can obtain.

Certain specific differences are noticeable owing to the particular nature of the schools, especially in regard to religious teaching. In the elementary and church schools (A) and (B), and the girls' secondary church school, such crimes as " blasphemy," " idolatry," " tearing the Bible," " sacrilege," " not going to," or " playing in church," are given by 69 per cent. of the 1,023 children; in the other schools by only 27 per cent. of the 397 children.

In the rural school " trespassing," " poaching," " breaking fences," " firing ricks," are mentioned by 39 per cent. of the 127, as against far less than 1 per cent. in the urban schools. The country children also give shorter and more immature lists.

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*This may also be the result of visits to the cinema, but no war films, such as Ypres, had been shown in any part of the city for many months before this enquiry was made.

In the private girls' school (E), where the majority of the children are boarders, the influence of the school is much more marked than in any of the day schools, elementary or secondary. In such a school the children are living in a small community of their own, it is made for and by them. All its interests loom large in the child's mind; every aspect of internal affairs is talked over from every point of view. One crime which figured in 23 out of 30 of the younger children's papers was that of "hiding another girl's hat," an event which had taken place about a week before the papers were written. It is interesting to compare this with the fact that in School (A), when a much more serious offence had been brought to light two days before the papers were written, only four girls mentioned it out of 203. Eighty-one per cent. of the 76 girls in School (E) gave, as crimes, infringements of the school rules, many of them citing several; whilst in the other schools such mentions never rise above 9 per cent., and these are chiefly contributed by children under 11 years old.

General Conclusions.

The first point which stands forth is that so far as the mere recital of crimes is concerned, the moral outlook of the child does not differ materially from that of the adult. The conventional rules of society, its catchwords and cliches, are evidently imbibed at a very early age. With the exception of one or two sexual offences, all the crimes given in the general survey were given in some form or other by children up to the age of 14. It is however obvious that though the children might be able to define crimes which they mentioned, nonetheless, until they are entering upon adolescence or well advanced therein, many of the crimes which they give have no real personal significance for them. The conventional moral outlook of children at any age is to be ascertained, not only from the crimes which they cite, but the words in which they are expressed and the connection in which they are given.

Secondly, it can be stated that the moral attitude of the child shows certain broad lines of development. The first stage, which obtains to about the age of nine years, is that in which the crimes mentioned are concerned largely with minor offences against the person in the case of the elementary school child, or with offences against nursery or preparatory school morality in the case of the secondary school child. The little ones may have learned certain of the conventional social crimes by name, but it is by name alone; their real preoccupation is with their immediate personal environment. From nine to the beginning of adolescence the conventional morality of his world is the keynote of the child's attitude; he believes firmly that what society calls black is black, allowing of no reservations. He apparently never dreams of expressing a personal opinion on the subject, much less of criticising in any way the judgments of society. As the child enters upon adolescence he appears to revert to the physical self once more, giving a number of serious offences against the person. This shows that attention is directed to the changing and ripening body, and that the possibility of inflicting serious injury thereon is clearly conceived. He also begins evidently to kick against authority, and probably suffers considerably in his rebellion as his thoughts turn, between 14 and 15, to "running away from home," and between 15 and 16 to

" suicide " or " parent murder." Between these years, also, he begins to question the rulings of society in regard to what is right and what is wrong, and to differ from some of these rulings. Further, he begins to see that offences which are visited with definite punishment are not necessarily the most serious. Excepting in slums, where vice beckons to any age, the early adolescent from 14 to 15 regards grave sexual crime from a detached and impersonal point of view. His faults are the venial offences of flirting or the first tentative experiments in love-making. By 19, however, the individual has generally come into full possession of himself. He sees himself as a member of society and bound to conform to the rules which society has formulated for its own preservation. At the same time, he feels that at bottom he alone can be his moral arbiter. He has also come into possession of himself as an individual with certain definite tendencies and capacities and physical attributes.

From the point of view of society it appears that the morality of the group depends on the nature of the group. Varying economic conditions bring the child face to face with the realities of life at different ages ; the slum child sees the struggle for existence in its sternest form from the beginning of its life, and early learns the different aspects of this struggle ; the sheltered child is guided for much longer by the morality of the home, and looks with undiscriminating eyes upon all the many crimes of which mankind is capable. To him " burglary " is as remote from his actual existence and probably as thrilling as being a " jolly pirate on the Spanish Main." He sees little difference between " setting fire to a hayrick " and " blowing up the Houses of Parliament." A further result of this postponement of the struggle for existence with the sheltered child is that he is comparatively highly imbued with the group spirit—or, at all events, with its catchwords by the age of 13. He can afford, in the small matters of his world, to stand down and let another take his chance ; he is seldom called upon to perform an act of self-denial that will bring him more than a transitory discomfort. With the slum child it is far otherwise ; probably he knows far more truly what it means to be unselfish, but he is not so ready to call egoism a crime ; his morality is of the kind, which knows that charity begins at home and that if the strong are to survive, then the weak must go to the wall.

An Exploration of the True-False Method of Examination.

BY WILLIAM BOYD.

ONE of the most serious defects of the new examination methods, constructed on the model of group tests of intelligence, is the difficulty of interpreting the results in human terms. Whether a bad result (for example) is to be credited to inferior general capacity, or to slackness, or to some mental peculiarity, or to some temporary aberration of health or to external conditions, it is simply impossible to say. The test has in some way not capable of ready analysis in respect of the individual examinee, yielded a result, and he and we have just got to accept it as we would some mysterious dispensation of Providence. With all its drawbacks, the ordinary examination does not shut us off in this fashion from the mental states of the individual who is being examined. The experienced examiner can form a pretty shrewd idea of the meaning of the result his kind of test has yielded, and can make use of his interpretation in dealing with the persons tested.

While this constitutes a strong argument for retaining the ordinary examination in some form as an essential method of testing work done in school and college, and against complete reliance on new examination methods, it must not be taken as a reason for not making all the use that can be made of these new methods. The advantages of objective methods capable of reducing the time spent on the weary grind of correction are great and obvious. But if we are to employ them with a good conscience we must recognize their limitations, and set about trying to minimize these. The best way to do this is to increase our knowledge of the peculiarities of each type of new examination: to find out, for instance, how the results got are affected generally by differences of age, sex, mental temper, native ability.

Some such problems were in my mind in carrying through three examination experiments with a University class, in illustration of a course of lectures on educational measurements in general, and examinations and tests in particular.

I propose to confine myself in this article to the conclusions reached in the case of the "True-False Method of Examination," but it will be necessary to begin with a brief account of the general procedure. To get comparable material for the three experiments, I prescribed successively, at intervals of six weeks, three chapters from my "History of Western Education." To ensure thorough study I gave out in each case a fortnight before the examination about a dozen topics, from which three ordinary questions were taken on the first day of examination; on the day following I gave the experimental test, confining myself to the topics specially indicated. The first experiment was with a number of short passages made up for a completion test; the second was with three-minutes' answers to a dozen questions; the third was with a True-False selection.

To begin with, the problem that was most definitely before me in the True-False experiment was the soundness of the method of marking by the subtraction of the number of judgments wrong from the number right, but the inquiry gradually broadened out to take in a variety of other matters.

These were the instructions given, and the first ten of the forty statements constituting the test :—

> “ Read the following statements carefully. If you think a statement is true, put an X in the first column opposite it ; if you think it false, put an O. If you do not know or if you are doubtful, guess. After filling up the first column this way, return to the beginning and proceed to fill up the second column. Opposite those statements regarding which you were perfectly sure of your judgment write, ‘ Yes.’ If you were not quite sure but were inclined to think that the statement was true or false, put a question mark to indicate an element of doubt. If you did not know whether the statement was true or false, and had to make a blind guess, write ‘ No.’ Please be candid, in the interests of science !
>
> *Note Well.*—When a view is attributed to a particular person, the point for your decision is not whether the view is true or false in itself, but whether it is a true or false presentation of that person’s ideas.”

	True or False.	State o Know-ledge.
“ 1. What is new in Stoy’s proposals, said Ziller, is not good, and what is good is not new		
“ 2. According to Dr. Montessori, scientific pedagogy must dispense with philosophical preconceptions altogether		
“ 3. Science, modern languages, and other subjects with a practical bias were not taught in the schools till the close of the nineteenth century		
“ 4. ‘ Nemo biologus nisi psychologus,’ said Stanley Hall		
“ 5. The influence of Froebel in the modern infant room is to be seen in the subordination of the personal activities of directed play to formal instruction		
“ 6. The concern of the schools with the health of the child is a by-product of militarism		
“ 7. The history of all mankind can be concentrated into the evolution of flax, cotton, and wool fibres into clothing (Dewey)		
“ 8. The Child Study Movement achieved success by treating the familiar facts of child life on sound statistical lines		
“ 9. The classical tradition in education is in essential antagonism to popular culture based on the vernacular literature		
“ 10. The ‘ Origin of Species ’ gave a new orientation to education theory ”		

Ninety students did this test ; 3,600 judgments were thus made. Of these judgments, 70 per cent. were marked by the examinees as surely known (Yes) ; 22 per cent. as doubtful (?) ; 8 per cent. as mere guesswork (No.).

The first question to be asked concerns the proportion of the errors in self-estimation in the three groups. It was 23 per cent. in the "Yes" lot; 45 per cent. in the "Doubtful"; and 45 per cent. in the "No." These are somewhat unexpected figures. It is surprising that nearly one judgment in four believed to be right turns out wrong, and surprising also that the percentage of error in the cases where there is thought to be some reason for the guess, is not less than in the cases of mere chance judgment. Plainly, the sharp distinction between knowledge and ignorance which is assumed in the marking formula "Right *minus* wrong," commonly employed in connection with True-False examinations, does not exist. That in itself might not, indeed, be an argument against it. There is no great injustice in penalizing an error of which the candidate is not conscious, by treating it in the same basis as a blind guess. More important is the fact that in neither the "Doubtful" nor the "Guesswork" group does the proportion of wrong judgments reach half of the total judgments. Now, all the people who have been using the True-False method of examination warn the candidate against guessing, and give him to understand that it is not in his own interests to guess. "Don't guess. A wrong response counts heavily against you," says one new examiner (quoted—Ben D. Wood, "Measurement in Higher Education," p. 284). Even on their own premises this is sheer humbug! A guess between two alternatives in a sphere where the guesser's ignorance is complete is as likely to be right as wrong, and, consequently, there is no disadvantage, even if there is no advantage, in guessing. But in the present case there seems to be even a small balance of advantage in guessing, indicated by the fact that the percentage of wrong judgments is only 45 as compared with the theoretical 50. On these facts the advice of the conscientious examiner ought surely to be: "When you do not know—guess," in order to give the poor examinee the benefit of the modicum of vague knowledge which makes his guesses rather more frequently right than wrong.*

The next question to be raised concerns the distribution of mistaken judgments among students of different ability and standing. To ascertain this the 90 students were ranked in order of merit on the basis of the whole year's work in my class. Five groups of marks (each reckoned of equal value) were represented in the aggregate of marks—marks for a general essay; for an essay based on practical observation and experiment; for an examination on the theory of education; for the three examinations on educational history (already mentioned), regarded as a unit; and for the three new examination tests, also regarded as a unit. The class thus ranked was divided into four nearly equal groups (23, 23, 22, 22). The percentage of the three types of judgment (whether right or wrong) in the four groups was as follows:—

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* It would be possible to penalize guessing, if that were thought necessary, by weighting wrong answers more than blanks (*e.g.*, by taking as marking formula R – 2W, instead of the usual R – W). But that means the abandonment of the assumption that the chance of error in a guess is one in two, on which the formula R – W, hitherto accepted by all users of the True-False Method, is based. If a guess is as likely to be right as wrong, *and the marking is done on that hypothesis,* it is dishonest to warn against guessing.

	Yes.	?	No.
Top Group	72	24	4
Upper Middle Group	73	21	6
Lower Middle Group	74	18	8
Bottom Group	62	25	13

The third column is the measure of ignorance : the percentage is least in the top group, rather greater in the next two, and markedly great in the bottom group. Leaving the bottom group out of account, it is to be noted that the percentage of assured judgments is almost the same in the top three-quarters of the class, but that the percentage of dubiety is greater in the better sections.

There is significance also in the percentage of wrong judgments in the total number in each of the three types, in the four quarters of the class :—

	Yes.	?	No.
Top Group	14	40	48
Upper Middle Group	23	46	39
Lower Middle Group	24	46	55
Bottom Group	31	46	40

The most interesting point here is the accuracy of the best students and the inaccuracy of the worst in the " Yes " judgments, as compared with the two middle lots. The Right *minus* Wrong formula will, obviously, add to the advantage of the best, and to the disadvantage of the worst on this reckoning.

An important question in any examination system is how a particular kind of examination affects the two sexes. So far as the facts brought out by the present investigation go, they suggest that the True-False Method favours the male students. On comparing the work done by the 29 men with the 61 women it was found that the percentage of the three types of judgment, right and wrong, were as follows :—

	Yes.	?	No.
Men	71	20	9
Women	70	23	7

and the percentages of wrong judgments were :—

	Yes.	?	No.
Men	24	40	40
Women	23	49	47

We have already seen that the percentage of dubious judgments (right and wrong) is greater in the top quarter of the class than in the second, and greater in the second than in the third, and that the percentage of " No " judgments, representing pure guesswork, shows the opposite tendency. The figures for the two sexes, interpreted in the light of this, indicate the general superiority of the women as a group. It is all the more surprising that the proportion of their guesses which go wrong is considerably greater than those of the inferior males. The latter contrive to achieve 60 per cent. of right judgments in both the " Doubtful " and the " No " lot of answers ; the former approximate to the half-and-half rightness of the pure guess.

Confirmation of the advantage given to the men by this particular test is got from a comparison of the aggregate marks of the two sexes over the session with their marks in the test. The aggregate mark of the median woman was 286. Only ten men out of the 29 (35 per cent.) equalled or exceeded this mark. But in the True-False test (using the right *minus* wrong formula, and omitting the "Doubtful" and the "No" estimates) the mark of the median woman was equalled or exceeded by 16 men out of the 29 (55 per cent.). It is interesting to add, for the sake of comparison, that in the completion test given earlier in the session, 11 men out of 29 equalled or exceeded the mark of the median woman.

Whether this advantage to the men is characteristic of the True-False Method in general, or is due to the special nature of my test, I do not know. Consideration of the statements submitted to the students in this particular test will show that in some cases the issue was complicated by the manner of presentation; that, in fact, some of the true statements were worded so that on a careless reading they might look untrue, and the untrue statements, on the other hand, given a form as plausible as possible. This, while necessary to make the examination stiff enough for students in the third and fourth years of their University course, made the test as much one of "cuteness" as of knowledge, and may have been to the disadvantage of the more knowing, but less "cute," women!

Let us pass now to consider the matter of marking. Here there are three courses open in ordinary practice :—

(*a*) The student may be advised or warned not to guess, and the score reckoned by deducting the number of wrong judgments from the number of right;

(*b*) With the same advice or warning the score may be reckoned by counting the number of right judgments and ignoring the wrong;

(*c*) If the student is required to say True or False with regard to every statement by being instructed to guess when he does not know, the score can only be reckoned in terms of number Right.

From the previous argument, it will be evident that the grounds on which the common practice of reckoning by Right *minus* Wrong depend are decidedly insecure. Instead of entering on a general discussion of the merits and demerits of the several methods, I submit correlation figures got by the Rank Method, showing the degree of correspondence of each with the aggregate mark for the session :—

(*a*)	Right *minus* Wrong	.57
(*b*)	Right (Yes only)	.50
(*c*)	Right (total)	.60

On these figures there is not a great deal of difference between the methods, but the counting of Right answers only is just a little less satisfactory than the other two.

Here, in conclusion, is the degree of correspondence between the aggregate mark for the session and (*a*) the ordinary examination on the same work as that tested immediately after by the True-False examination; (*b*) the True-False examination; and (*c*) the previous "completion" examination, all measured by the Rank formula for the coefficient of correlation :—

(*a*) .86; (*b*) .64; (*c*) .70.

The superiority of the ordinary examination is unmistakable.

University Education Department or Two-Year College ?

By MARGARET PHILLIPS.

In my early student days, before I became familiar with educational theory as such, I remember wondering about the various types of educational institution which I had then met—a boarding school, a day school, a provincial University, a University settlement—and trying to account for the differences in their aim and outlook. I ended by either formulating or adopting—I have forgotten which—two theories of education, for which I found (or borrowed ?) the names " macrocosmic " and " microcosmic " respectively, to one or other of which, it seemed, all educational institutions could be referred.

The " macrocosmic " point of view I may, perhaps, express as follows : " The aim of education is to introduce the student, as quickly and as comprehensively as possible, to as much of the big world as he can understand. We do not know with what part of this world he will ultimately come to concern himself most closely, but this does not matter for our purpose. He will in any case need a map of the whole. Neither does it matter what aspect of the whole he studies first. There is, in R. L. Nettleship's phrase, a ' path from every fact to every other fact in the universe.' All roads, if pursued far enough, lead to Rome. He has only to work steadily onward, from whatever starting point he may have chosen, and he will find his isolated scraps of experience falling into place and the world becoming one and coherent. Therefore let us give him experience, in as great variety and quantity as possible, and do not let us concern ourselves overmuch with selecting it. In this way we can best help him to face the future undismayed. As regards the particular job to which he may be going, its ropes will in any case have to be learned when the job is undertaken."

The " microcosmic " theory, on the other hand, runs somewhat as follows : " The big world is complex, sinister, and, to a beginner, unintelligible. The young student does not know where to attack it, and without guidance may easily lose himself. It should, therefore, be revealed to him by easy stages, in manageable amounts and in logical order. Whenever possible he should be provided with reduced-scale models —little worlds which he can study at his leisure—resembling in type, but differing in size and complexity from, that which he is ultimately to inhabit ; presenting singly and in simplified form the problems which he must learn to solve. Therefore let him choose his life work—the aspect of the world which he hopes to make peculiarly his own—while he is still young, and during at any rate the latter years of his education let the experience selected for him be such as will bear most relevantly and significantly upon his chosen vocation."

What connection have these two points of view with the existing methods of training teachers ? Coming to work in a two-year college after experience of two different University Education departments, and trying to account for the contrast with which I am faced, I find the old terminology relevant again. The macrocosmic theory seems to express the University's attitude to the intending teacher ; the microcosmic theory to represent the two-year college. The University says, in effect, "You want to teach? Then your first business is to become a fully-developed person and, as far as is possible, a finished student. The world of school joins on to the big world at almost any point you like to select; therefore, all is, potentially, grist to your mill. Any experience you may gain has significance and can be turned to good account. Therefore, just as it does not particularly matter by what road you arrived at your present decision, neither does it greatly matter what course you now follow, provided only that it is sufficiently full, stimulating and varied." As a distinguished head master of a well-known public school, himself apparently a convert to the "macrocosmic" theory, recently put it in a private memorandum on the training of teachers: "The right way of progress in training teachers, not only for the public schools but also for public elementary and secondary schools, is to aim at . . . a broadening in the qualifications demanded in a trained teacher. . . . A certificate of registration as a teacher (should be) attainable either through a training course or through other avenues, such as, for instance, evidence of having taught satisfactorily for a period of time, or of having attended certain vacation courses, or of having travelled with a view to studying educational methods in other lands. It should be emphasized that the certificate should not depend on any narrow scheme of training but that the methods of obtaining it should be as many and as varied as possible."

How does this work out in practice? During my own studentship in a University Education department I was the willing victim of the macrocosmic theory. I attended lectures on a variety of topics, relevant or irrelevant to my set course. I put in evening work at girls' clubs; I was present at adult school meetings before breakfast on Sunday morning, and listened to political speeches after evening church; I joined every conceivable academic society and discussion circle; I "saw life" in connection with the social activities of a University settlement in a slum area. Had I pursued the same course a decade later I should have varied the programme by attending public dances, dinners and receptions and by joining social, professional, and athletic clubs rather than academic societies.

The policy of the two-year college, on the other hand, may be expressed somewhat thus: "The teacher's work is immensely significant; more so, almost, than any other. His influence will reverberate down the ages as certainly as the ripples in a pool widen until they reach the shore. Therefore it is important that he should make as few mistakes as possible. Those he makes cannot be repaired, for they involve others as well as himself. Human material must not be wasted, and can only within limits be safely experimented upon. Further, however good a person he may be in general, teaching demands a special technique, without which he will not be able to bring his general qualities to bear. This technique we propose to give him. But he will lose nothing thereby. His work is so central, so universal in character, that if he can make a good job of it the chances are that he will make a good job of life, since the same qualities are required for both.

"Therefore we will organize our course round our practical work. As regards curriculum: any subject of study, if attacked in the right spirit and with sufficient largeness, is educative in its effect. But our students' present knowledge is limited, and their outlook and interests narrow. So we will choose those subjects and those aspects of a subject whose practical bearing and value are most obvious. Let our literary, historical and scientific studies be in the first place of material suitable for presentation to children. Let us choose for our own enjoyment songs, games and dances which can subsequently be introduced into the schools. Let us develop those types of artistic ability which will be most useful there. Let our crafts and hobbies be pursued with an eye to the resources of the schools in apparatus and material. Let our psychology be child study. And as regards our residential life, let it embody the ethos and reflect the characteristics of a well-regulated school. Let us cultivate those virtues which we hope to develop in our pupils. Let our own prefects learn to bear the responsibility which they are later to expect from others. Finally, as regards our voluntary activities, let our literary, artistic and debating clubs, our musical and dramatic societies, the organization of our athletics, our old students' associations, our May Day and Christmas celebrations, and our social activities generally be such as will serve our students for a pattern and an inspiration when they become teachers."

So there develops the self-maintaining residential community, the "universe whose hub is the child," with its daily worship at the shrine of St. Christopher, patron saint of children; its daily pilgrimage to the schools; its ceaseless discussion of problems arising therein. Its staff of experts takes an active part in local school management. Its students sally forth, their bicycles laden with toys and apparatus, chants in honour of "the little childer" on their lips. Its atmosphere of enthusiasm is such as not the most apathetic can resist.

Which point of view is the sounder? Is either complete in itself? How has the divergence come about? The explanation appears to be partly historical, partly functional, partly psychological. Historical, because the two-year colleges have grown out of an effort to meet the urgent needs and to solve the pressing social problems presented by the condition of "the lower orders" at the beginning of the nineteenth century. On the aftermath of this problem their best energies are still concentrated; by it their scale of values is still influenced. Functional, because the University is in its very nature a place of preparation for complete living, and the resulting broad-mindedness and impartiality tend to pervade even a professional department.

But psychological? Is there a difference in the type of student attending the two institutions great enough to warrant a corresponding difference in the type of training provided? It has been suggested by the principal of one of the best-known two-year colleges that there is a type of student for whom an immediate objective is essential; to whom general ideas are only intelligible if presented in concrete form; who cannot find, unaided, the "path from every fact to every other fact in the universe"; whose interests are limited in scope; who must, in short, be set to work immediately on "the work that lies under his nose with the tools that lie close to his hand." The distinction appears to be one which modern psychology would accept; corresponding as it perhaps does to some difference in the distribution of "general" and "special" abilities. But does it follow that students of this latter type will all find their way to the appropriate type of institution? My own experience suggests that a considerable number of such students are at present to be found in the University Education departments. If so, they raise difficulties which the University does not as yet fully meet. The ideal University student, of good general ability and associative capacity, will, of course, win through to technical efficiency in teaching by virtue of his appreciation of the immense social value of his work, and by the application thereto of the general principles which he has drawn from his experience up to date. He will realize that, as Kipling has put it, "Boys and men are all of a piece; and he who can deal with the one will come in time to control the other." But in a University student of lesser calibre and narrower outlook one tends to find, in place of intelligent self-criticism, criticism of the system whereof he finds himself a member; instead of loyalty to his profession, an intense consciousness of his status in the eyes of his friends in the medical and engineering faculties. In such a student, contact with a wider world may produce distraction rather than reinforcement of interest, and scepticism rather than faith. Instead of seeking to understand his pupils, he may tend to despise them. I have had ludicrous experiences with young science graduates, groping their way back from their degree course and many-sided adult activities to contact with the child mind, and failing dismally to find it.

Neither does it appear that the students in two-year colleges are necessarily all of the "practical" type, who can only learn vocationally. This may have been true in the past, but the student for whose previous education and outlook the elementary school and pupil teacher centre were jointly responsible is fast disappearing. Nowadays, of two pupils sitting side by side in the sixth form room of a secondary school, both having matriculated and both destined for teaching, one may be taken by the University authorities and the other left for the two-year college. Yet the distinction between them, in ability and promise, may be very small. Or, in areas where inequality of opportunity still persists, the greater ability may reach the two-year college. I have recently met two such students, both from remote and backward rural areas, one of whom should, in my opinion, have taken a degree in psychology, the other in metaphysics.

What, then, is the solution? Let us throw the rival theories into other terms. Two forces are, broadly speaking, responsible for the work of education:—the conservative force of habit; the revolutionary force of ideas. Neither will suffice alone; both are essential to a balanced life. Ideas are needed to give direction, impetus, and adaptability; habit to ensure consistency, continuity, and technical skill. Now the "microcosmic" theory seems in the last analysis to emphasize the importance of habit, while the "macrocosmic" theory pins its faith rather to the fertilizing power of ideas. Hence the resulting difference in the methods, and the products, of the two systems respectively. "The University-trained student," said one of His Majesty's Inspectors recently, "is efficient after the first five years of his teaching life" (*i.e.*, when he has acquired the skill necessary for effective work); "the two-year student is efficient, roughly speaking, during just those first five years" (*i.e.*, until his "habitual" capital is exhausted). Would it not be possible to train a student who might be reasonably efficient all along the line?

How could this be achieved? Might not some *rapprochement* between the two types of institutions come about, so that each might partake of the virtues of the other ? This has seemed of late to be fast taking place from the side of the two-year colleges. Their staffs are increasingly manned by University men and women. Their students are beginning to meet and mingle with University students at inter-collegiate conferences and, in University towns, to attend many of the same lectures. Can it be said that corresponding approximation is taking place from the side of the University departments ? Are these coming to regard the practical and æsthetic subjects—drawing, handwork, music, physical training, as possessing a value and importance equal to that of the academic subjects ? Are they taking skill as seriously as they take ideas ? Are they aiming at immediate as well as at ultimate efficiency ? Are they tending to produce loyalists as well as critics, and servants as well as sceptics ?

But there is another solution—foreshadowed, apparently, by the report of the Departmental Committee on Training. It seems there to be intended that the two types of institutions, continuing to look in different directions, should come to produce increasingly different types of teachers destined for different functions ; that the two-year college should intensify, rather than modify, its strictly professional character, while the University department (or, so the report's virtual omission to discuss the four-year course suggests) retains its present characteristics unchanged.

Now suppose this happens. What place will be found in the educational system for the two types of students so developed ? To whom ideas have been given, of him can ideas reasonably be required. Similarly, he whose own habits and technique have been trained is most likely to be successful in developing habit and skill in others. But in normal child development the influence of habit is now recognized as characteristic of a relatively early age. The teaching of Dr. Montessori, the traditional Jesuit demand for the first seven years of a child's life, illustrate this. On the other hand, the vitalizing influence of ideas is peculiarly appropriate to the rebirth which occurs at adolescence. Educational administrators and psychologists—Lord Eustace Percy with his plea for " greater knowledge " for the upper classes in the primary school—have recently united in re-asserting this. Suppose, then, as seems likely to happen, that this psychological distinction finds expression in the reorganization of the primary schools as " junior " and " senior " schools providing respectively for scholars under and over the age of 11+. In this case the junior schools would look naturally to the two-year colleges for their staffs ; the senior schools to the Universities. At the moment of writing this seems the likelier, as well as, perhaps, the more intellectually satisfying solution.

Investigation of Mathematical Ability in the Class-room.

By W. S. FLACK.

Up to the present, mental tests have chiefly been used as an indication of the general intelligence of pupils, and undoubtedly have been of value to those concerned with the selection of suitable pupils for various types of schools, and also to head teachers for classification and promotion purposes.

Burt[1] points out that " ability in certain subjects is determined largely by special aptitude, and attainment in such subjects is very incompletely correlated with attainment in the rest." If mental tests can help in discovering the native ability of pupils in various subjects they will then be of great value to specialist teachers in secondary schools. The impossibility of obtaining homogeneous classes has now been generally realized, and this has shown the necessity of supplementing collective teaching by individual instruction. The time at the disposal of any teacher for individual instruction is limited, and should be reserved for those who are likely to profit by it most. Hence the need for a thorough diagnosis of the abilities and attainments of the pupils and for consideration of the best means of dealing with the various weaknesses.

The investigation referred to in this paper is concerned with the teaching of mathematics, and was carried out with a form of 28 pupils in a boys' secondary school during the year preceding that in which the first school examination was taken. The objects may be set out briefly as follows :—

(1) To grade the pupils regarding their achievements in the various branches of mathematics.

(2) To determine the qualitative peculiarities of the native abilities of the various pupils. It was hoped that a diagnosis of the special disabilities of certain pupils would reveal the probable causes of lack of achievement, and that in consequence appropriate methods of instruction might be applied as remedial measures.

(3) To obtain data which would indicate those tests which might be used in the lower school for prognostic purposes in mathematics.

TESTS APPLIED.

(1) *Achievement Tests.*

The suggestions of Dr. Ballard[2] were carried out as far as possible. A large number of small questions were given in preference to a small number of large questions. In Arithmetic and Algebra, Ballard's standard tests were used, and in Trigonometry a similar examination consisting of sixty questions was given. In Geometry, the test was divided into seven parts, and these were done by the pupils on different days. The questions were representative of the whole field of elementary geometry already covered, and were varied in character in order to call into play most of the abilities required for proficiency in the subject.

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[1] Burt : " The Distribution and Relations of Educational Abilities."

[2] Ballard, P. B. : " The New Examiner."

The following geometrical tests were given :—

	Maximum marks.
(1) Drawing Figure Test	20
(2) Completion Test	10
(3) Converse Test	10
(4) Constructions Test	10
(5) Loci Test	10
(6) Inference Test	20
(7) Riders Test	20
	100

In the Ballard tests the pupils were advised to work as quickly and accurately as possible. As norms of performance were not required, work was stopped as soon as one boy had completed the test.

(2) *Mental Tests.*

The tests given may be classified as follows :—

(*a*) *Verbal Material* :
- (1) Opposites.
- (2) Analogies.
- (3) Absurdities.
- (4) Directions.
- (5) Syllogisms.[1]

(*b*) *Non-verbal Material* :
- (1) Orientation.[2]
- (2) Number Series.
- (3) Rogers' Reasoning Test.[3]
- (4) Inference with Symbols (Rogers).
- (5) Schema Test.[4]

(*c*) *Computation* :
- (1) Addition.
- (2) Subtraction.
- (3) Multiplication.
- (4) Division.
- (5) Missing Digits.[5]

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[1] The Syllogism Test consisted of :—
(*a*) Writing "true" or "false" against a number of syllogisms.
(*b*) Completing a number of incomplete syllogisms by adding the conclusion or the second of the premises.

[2] Ballard, P. B. : "Group Tests of Intelligence."

[3] Rogers : "Experimental Tests of Mathematical Ability and their Prognostic Value."

[4] Bradford, E. J. G. : "A Psychological Analysis of School Grading."—*Journal of Experimental Pedagogy*. Vol. II.

[5] Wyatt, S. : "The Quantitative Investigation of Higher Mental Processes."—*British Journal of Psychology*. 1913.

(*d*) *Memory*:
- (1) Nonsense Syllables,[1] Immediate Reproduction.
- (2) Nonsense Syllables, Delayed Reproduction.
- (3) Nonsense Drawings,[1] Immediate Reproduction.

(*e*) *Visualization*:
- (1) Cross Line Test.[2]
- (2) Cube Test.
- (3) Paper Folding Test.

Some of the above tests have been found by previous investigators to show a positive correlation with one or other of the branches of school mathematics. The others cover a fairly extensive part of the mental equipment of the pupil and were selected as being likely to involve elements which form part of mathematical ability.

A brief description is given below of those mental tests which have not been widely used in this country.

Rogers' Reasoning Test.

This test consists of a ladder-like arrangement of inferences, of gradually growing complexity and difficulty.

Examples.

	Given Facts.	*Fill in.*
(1)	P is longer than Q ;	
	R is shorter than Q ; therefore P is	R
(4)	Z is thicker than X ; therefore X is	H.
	H is as thick as Z ; therefore Y is	H.
	V is thicker than H ; therefore X is	V.
	V is thinner than Y ; therefore Z is	Y.

Inference with Symbols Test (*Rogers*).

This demands ability to manipulate symbols with ease. Five common symbols were used, of which only one, the sign for "equals," was familiar to the subjects.

The following was written on the blackboard before the test was commenced :—

$>$ means "greater than."
$<$ means "less than."
$=$ means "equal to."
$\ngtr$ means "not greater than."
$\nless$ means "not less than."

Several illustrative examples were shown before the test was applied. If no inference could be made the subjects were told to write the word "nothing."

Examples.

	Given Facts.	*Fill in.*
(1)	$a < b = c$; therefore a	*c*.
(2)	$a = b \nless c = d$; therefore a	*d*.
(3)	$a > b > c \ngtr d$; therefore a	*d*.

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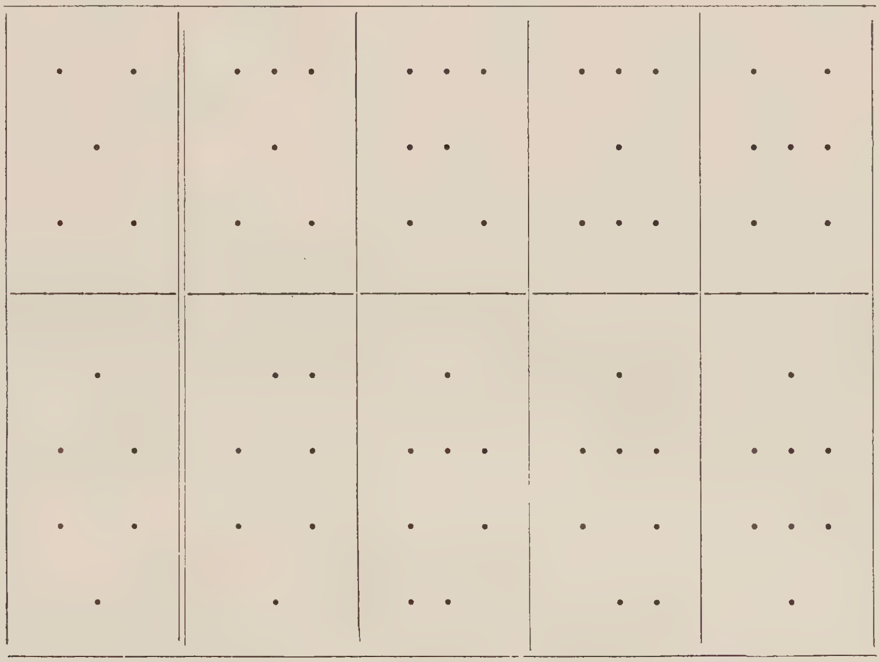
[1] Wyatt, S. : "The Quantitative Investigation of Higher Mental Processes." —*British Journal of Psychology*. 1913.

[2] Valentine, C. W. : "Experimental Psychology."

Schema Test.

The subject has to weave a pattern of dots into a figure, and recognise this figure in another group which contains superfluous dots, whose presence acts as a distracting influence.

Examples.

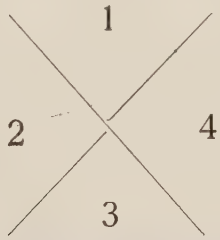


The subject is required to cross off from the group of dots in any line those dots which do not appear in the pattern of dots at the beginning of that line.

The pupils were stopped as soon as one boy had finished. One mark was awarded for each dot correctly crossed out and one mark was deducted if a dot was incorrectly crossed out, or if one that should have been deleted had been missed.

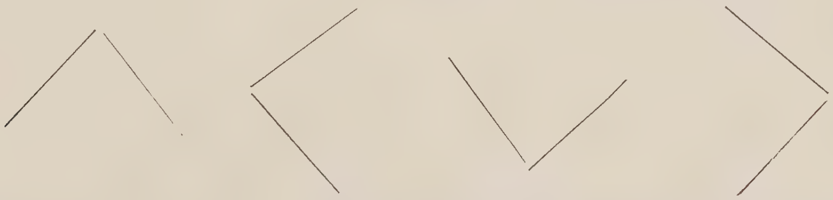
Cross Line Test.

The following figure was drawn on blackboard :—



It was pointed out that the figure was made up of four compartments containing a number.

These compartments were then drawn separately thus :—



Pupils were asked to give the number to which each compartment corresponded.

Test.

1	2	3
4	5	6
7	8	9

The above figure was drawn on the reverse side of blackboard and was exposed for a period of 20 seconds. Papers on which the separate compartments had been printed had been previously distributed face downwards. Pupils turned them over and commenced to write in each compartment the number corresponding to it. When one subject had finished the signal was given to stop. One mark was given for each number correct.

Cube Test.

A cube of three-inch edge and painted red all over its surface was shown. The pupils were asked to imagine the cube cut into smaller cubes each of one-inch edge.

After the cube had been removed, the numbers 0, 1, 2, 3 were written by the subjects on separate lines and the papers turned over.

Instructions were given to put down the number of small cubes that would have no sides, one side, two sides, and three sides painted red after the three-inch cube had been cut as stated.

Perhaps it should be stated that the pupils were warned not to make any drawings during the test.

Paper Folding Test.

This exercise was based on the famous Binet test of the results of a wedge-shaped cut on the edge of a folded paper.

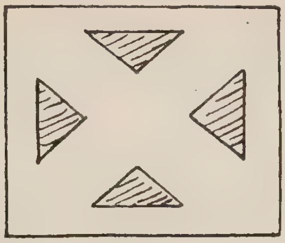
In the present investigation five different exercises were given, as it was thought that success or failure in only one case may be due to random impulses and ideas instead of the result of a thorough-going plan of action.

Before commencing the experiment the pupils were provided with pieces of paper and were instructed to draw four rectangles of the same shape as a sheet of foolscap paper and also a square.

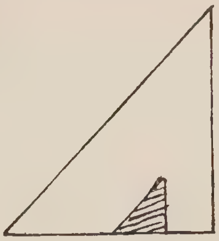
A piece of foolscap paper was then folded, the pupils being told to take particular notice of the folded edges. After the folded paper had been cut the pupils were allowed three minutes to draw the appearance of the paper when opened out.

Example.

A square piece of paper was used in this case and folded as follows :—



Folded paper.



Unfolded paper.

All the tests were administered by the writer, and most of the mental tests were carried out during the first period of the Monday mornings, the duplicate tests taking place as far as possible a week later. The testing was never prolonged more than 45 minutes, in order to avoid the effects of fatigue. The boys displayed a keen interest and clearly enjoyed doing some of the tasks. They were anxious to hear the results, and the writer believes that the scores represent the best efforts of the subjects at the time of testing.

As practically all the mental tests were given twice, the scores of each subject in the two applications were amalgamated and from the total score the " rank " of the individual was obtained. A test is only considered reliable if its reliability coefficient is above .50. All the tests except one (Missing Digits) exhibit at least this amount of self-consistency.

In constructing a composite measure of the individual's achievements in the several tests—Arithmetic, Algebra, Geometry, and Trigonometry—in order to get a measure of his mathematical ability, the method suggested by Woodworth[1] was adopted.

The Results.

The results of the mathematical tests showed that the ability of an individual in one branch of the subject was in general a good indication of his ability in the other branches. If the class be divided for each test into three approximately equal groups, " good," " medium," and " weak " according to their ranks, and having 9, 10, 9 pupils in each group respectively, then :—

12 boys are in the same group in 4 tests.
9 ,, ,, ,, ,, 3 ,,
7 ,, ,, ,, ,, 2 ,,

Only two boys who were in the " weak " group in one of the tests succeeded in getting in the " good " group in one of the other tests.

It will be seen from the figures below that the scores in the various mathematical tests show a significant negative correlation with " age " in each case.

Mathematical Composite and Age	$r = —.60$
Arithmetic and Age	$r = —.40$
Algebra and Age	$r = —.35$
Geometry and Age	$r = —.54$
Trigonometry and Age	$r = —.54$

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[1] Woodworth, R. S. : " Combining the Results of Several Tests."—*Psychological Review.* 1912.

Of the eight oldest boys, not one succeeded in getting in the first eight in the combined tests, and of the eight youngest boys, five were in the first eight.

The mathematical achievements of the pupils only gave a correlation coefficient of .13 with the length of time spent in a secondary school.

The mental tests that correlated most highly with mathematical ability were the following :—Inference with Symbols Test, Orientation Test, Cross Line Test, Syllogism Test, and the Number Series Test. There was a low correlation between these individual tests, so there is reason to believe that they were not concerned with any one phase of mathematical capacity in particular.

Although, owing to the small number of units of measurement, it was impossible to use two of the tests of visualization for the calculation of correlation coefficients, the results clearly showed that this group of tests was the most successful in classifying the pupils regarding their mathematical ability. Furthermore, not one of the pupils failed in one test and excelled in another. Of the 11 boys who did badly in the Paper Folding Test, eight failed in the Cross Line Test, and all the boys who scored no marks in the Cube Test were unable to get any marks in the Paper Folding Test. However, no one mental test can be regarded as a satisfactory criterion of a pupil's ability. For example, one of the best boys in mathematics was last in the Number Series Test, although his marked ability was indicated by his general record in the mental tests.

The most interesting information obtained from the tests is that revealed when a graph is drawn for each individual showing his rank in each of the achievement and mental tests. In the following diagram the records of the boys whose positions in mathematics were second and twenty-seventh respectively are shown.

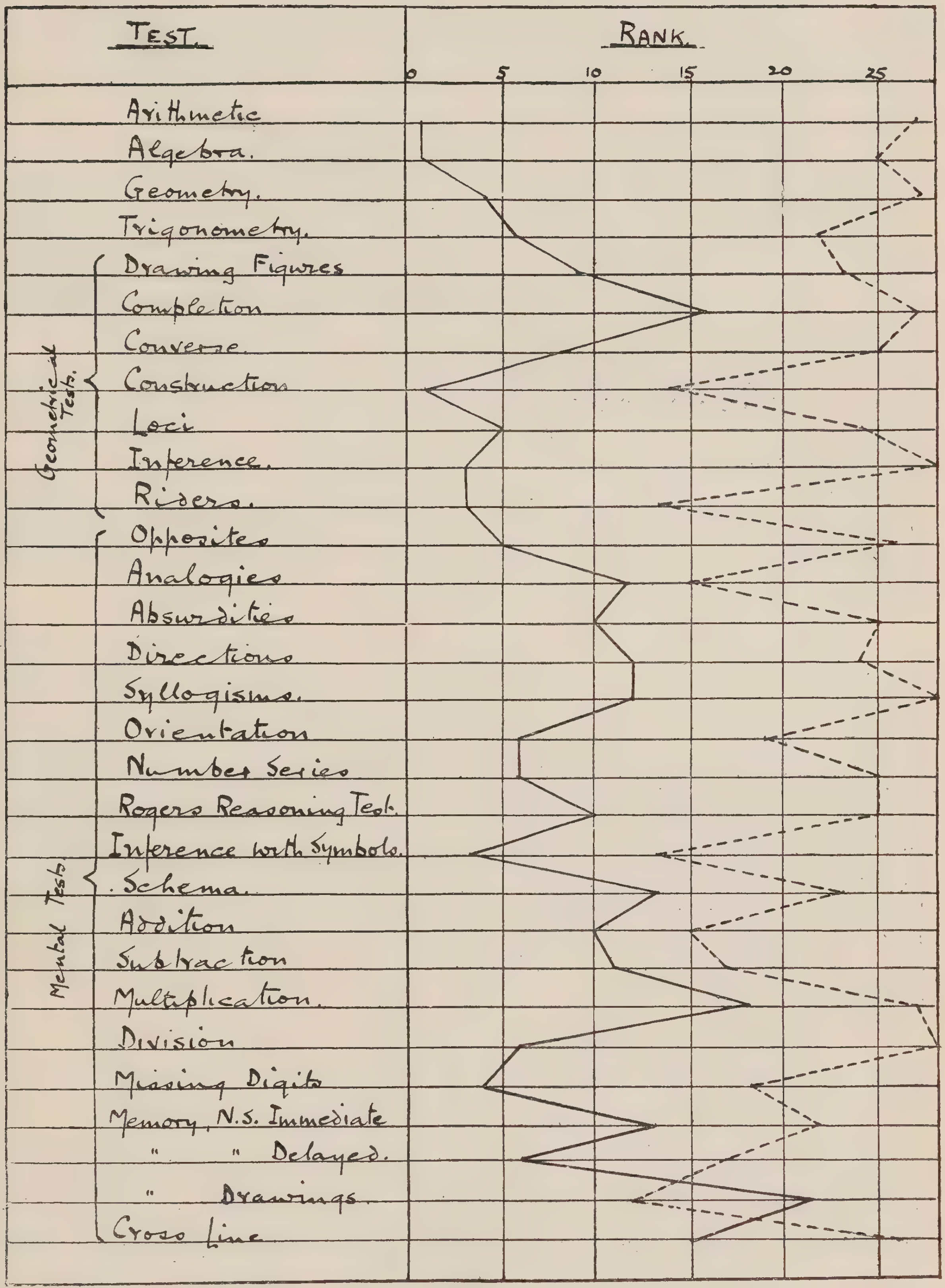
The results showed that those pupils who had a very low mental record also did badly in the mathematical tests. There was one exception, but this boy's failure in the mental tests seemed to be due to nervousness ; he was quite unable to do himself justice in any one of the tests, which only lasted a few minutes.

It might be expected that average intelligence would be associated with average scholarship, as shown by the results of the mathematical tests, but actually it was associated with all degrees of scholarship.

Superior intelligence as revealed by the mental tests was not an absolute guarantee of excellent academic achievements. The exceptions are the most interesting from the teacher's point if view, for it is here that he may expect to find his efforts in the direction of remedial instruction rewarded.

A limited number of the more striking cases will be discussed to illustrate the possibilities of an investigation of this nature in discovering mental peculiarities and abnormalities of various students and in indicating probable causes of retardation.

A.—This boy was good in arithmetic and algebra, but weak in geometry and trigonometry. He did particularly badly in the previous terminal examination in geometry, being last but one in the form. In the five mental tests which correlated highly with mathematical ability his average rank was thirteenth. He was first in number series, but twenty-sixth in the syllogisms test. He showed marked ability in all the computation tests, and did fairly well in the memory tests. In the tests of verbal ability he was weak, being last in both the opposites and directions tests.



In four of the diagnostic geometrical tests he obtained an average position, but was third in the inference test, twenty-seventh in drawing figures, and twenty-third in the riders test.

The results indicate that this boy's ability in mathematics is above the average in the form. His failure in geometry is largely due to his weakness in dealing with verbal material—hence his inability to carry out the instructions given in the question with regard to drawing the figure. When this has been done successfully, he can make correct inferences from the given data, but is weak in selecting those facts that are necessary for the proof, and in arranging them so as to arrive at the desired end.

B.—This pupil, like " A," was very good in arithmetic and algebra, but weak in geometry, his rank in all the mathematical tests being twelfth. He was outstanding in all the computation tests, being first in missing digits, and in the first three in three others. He was above the average in all the memory tests, and showed no marked weakness in verbal ability. In the seven geometrical tests his highest rank was fifteenth in drawing figures.

In the three tests of visualization he completely failed, scoring no marks at all in both the paper folding and cube tests. He was also very weak (twenty-seventh) in the schema test, which " necessitates the ability to apprehend form."

Bolton[1] states :—" Some pupils succeed famously with arithmetic and algebra, but fail utterly in geometry. A diagnosis of their types of imagery would doubtless reveal inability to visualize." The results of the tests seem to indicate that " B " is an example of this type.

C.—This boy did badly in the mathematical tests (twenty-second), but well (average rank, ninth) in the mental tests that correlated highly with mathematical ability. He was not in the last ten in any one of the five tests. In computation he was the best boy in the form, his positions in the five tests being 2, 1, 3, 1, 2. This evidently accounted for his comparatively high position (eighth) in the arithmetic tests, as he was fifth in the mechanical and seventeenth in the reasoning arithmetic tests. In the tests of verbal ability his scores were erratic ; he was first in opposites, fourth in analogies, and twenty-fifth in absurdities. Although he failed in the paper folding test, he succeeded in doing the other two tests of visualization fairly well. His great weakness was revealed in the memory tests, his positions being twenty-sixth, twenty-third, and twenty-seventh.

Judging by the results of the mental tests, this boy is by no means dull, as suggested by his achievements in the terminal examinations. His retardation may be due largely to his weakness in memory.

D.—This is an example of a boy who did particularly well in all the mathematical tests with the exception of the Ballard arithmetic tests. He was in the first ten in all the geometrical tests. His positions in the present tests and in the previous terminal examination are given below.

	Arith.	Alg.	Geom.	Trig.
Present Tests	24	10	2	4
Term Tests	3	2	12	5

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[1] Bolton, F. E. : " Everyday Psychology for Teachers."

It will be seen that no particular weakness in arithmetic was indicated by the terminal examination—quite the reverse, as he obtained 85 per cent. on a paper which was composed chiefly of problems.

No outstanding ability was shown in dealing with the mental tests. He only succeeded in getting in the first ten in five of the tests, but three of these were among those that correlated highly with mathematical ability. His results in computation were a great surprise to the writer, as he was easily the worst boy in the form in these tests. For example, in addition he only succeeded in adding 12 columns correctly while the best boy did 52. It may be interesting to note here that the best boy in addition, who also showed marked ability in all the computation tests, only obtained 10 per cent. in arithmetic and 2 per cent. in algebra, at the previous terminal examination and his position was twenty-fourth in the present series of mathematical tests.

On the following graph the records of " C " and " D " are shown. It will be seen that, except in the five tests that correlated highly with mathematical ability, there is a great contrast in their scores.

E.—This pupil's achievements in mathematics were better than would be expected judging by his mental test results. His rank in mathematical ability was eleventh. He was fourth in trigonometry, but his final position was lowered owing to his being twentieth in arithmetic.

In the mental tests he was only in the first ten on four occasions, and his average position was nineteenth in the five tests that correlated highly with mathematics.

He showed outstanding ability in mechanical memory, being first in the form in both immediate and delayed reproduction of nonsense syllables. The list of nine nonsense syllables was exposed for three minutes during the last lesson on a Friday afternoon. After counting aloud from twenty backwards, the subjects were required to reproduce the syllables in their correct positions. The papers were collected and corrected by the writer and the list was not seen by the pupils after the three minutes exposure. On the following Monday morning during the first period papers were distributed and instructions given to reproduce the list of syllables in their correct positions. No warning had been given that such a test would take place. A second immediate reproduction test concerned with slightly harder syllables was given on a later date. The boy " E " only made one error in all the three tests.

This marked ability in memory may possibly be the cause of the boy's achievements being higher than would be anticipated from his mental test record. In the previous terminal examination in geometry he obtained full marks for theorems and no marks for riders. In trigonometry he obtained a high position both in the terminal examination and in the present tests. Both nonsense syllables tests (especially delayed reproduction) showed a high positive correlation with this branch of mathematics.[1] Possibly memory plays a prominent part in the ability to master the early stages of a new sphere of mathematics.

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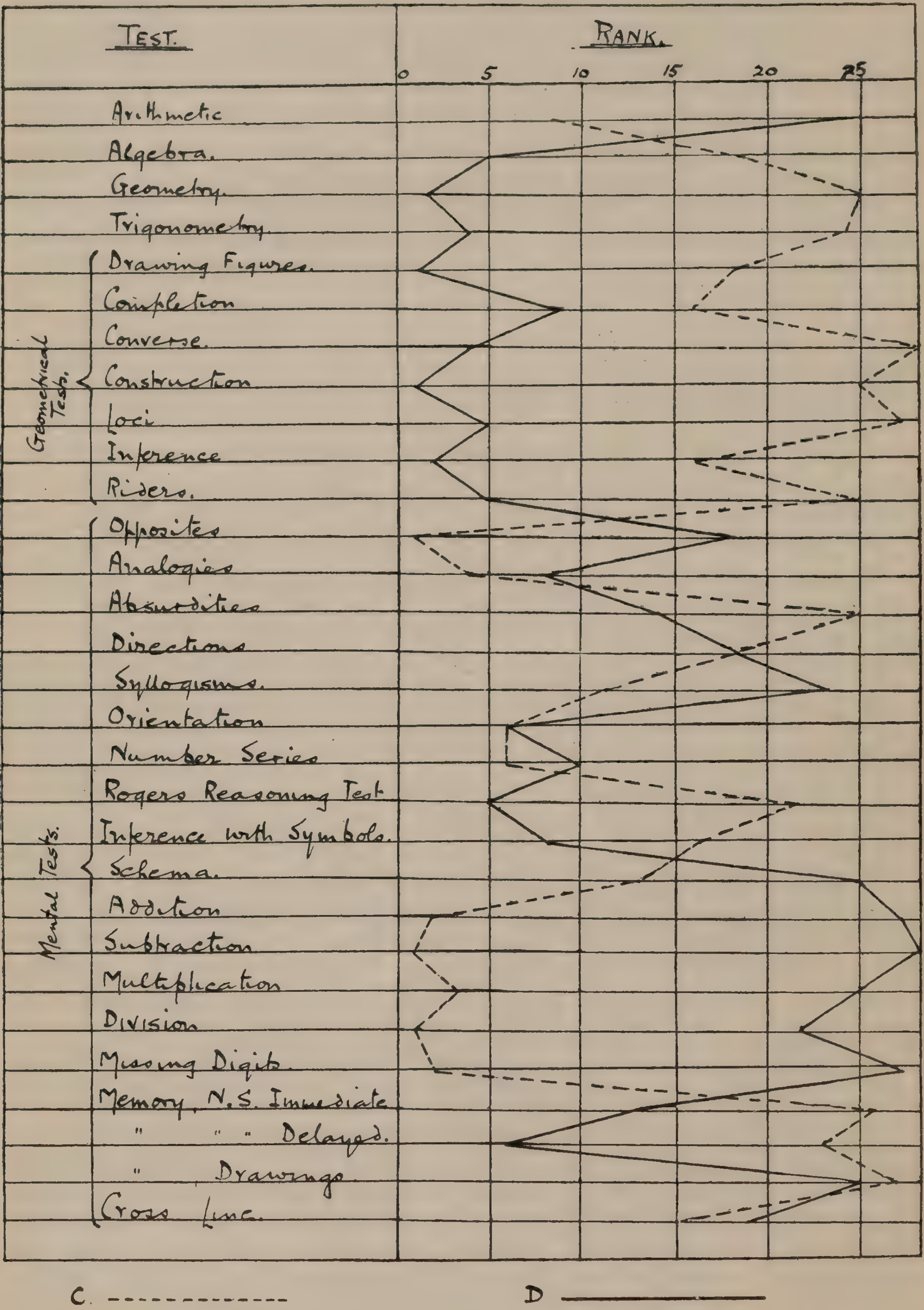
[1] The test in trigonometry was formed by the writer, who had taken no part in the teaching of the subject. Not one question was taken from the textbook used by the pupils.

The memory tests showed no significant correlation with mathematical achievements except in the case of trigonometry. However, on studying individual cases, it seems that high ability or great weakness in memory may influence the mathematical results. In the following table the rank in mental tests is the average of those obtained in the five tests that gave high correlation with mathematics.



	Rank. Mental Tests.	 Mathematical Tests.	 Memory Tests.
P	5	13	24
Q	9	22	23
R	10	18	22
S	19	11	1
T	16	8	2

Judging from personal experience, an investigation such as the present one leads the teacher to take a far more lively interest in each individual of a class. One is no longer content with a " general impression " of the capabilities and achievements of a pupil. Each pupil is a problem and one is constantly on the look-out for information likely to aid in its solution.

Every examination paper marked either confirms or confounds previously formed opinions regarding an individual. The achievements of pupils in other fields are noted, and are discussed with other members of the staff. Comments on terminal reports are filled in more accurately. The term " unsatisfactory " is not so frequently applied to those who do badly in a certain subject, and " satisfactory " to those who manage to obtain more than the average mark of the class. In short, the teacher is concerned as much with the fertility of the ground in which he works as with the subject matter and its presentation.

It has to be borne in mind, in connection with an investigation of this kind, that a certain amount of time must be given up from the ordinary school work and this can only be justified if the effectiveness of the instruction is increased. However, the actual time taken up by testing in the form room is comparatively short, most of the work being concerned with the tabulation and interpretation of results.

Of course, owing to the limited scope of the present study, no final conclusions can be made, but there is reason to believe that, if an investigation of this nature were carried out on a wider scale, the results would be of great value to the mathematical master as a valuable supplementation of the ordinary school methods of examination. A series of properly standardized mental tests, which show a high correlation with mathematical ability, would be a great asset in the lower forms for prognostic purposes, and diagnostic tests, similar to the one suggested in geometry, would be particularly useful in middle school work for ascertaining the various weaknesses of the individual pupils. Then remedial instruction could be given before the first school examination is taken.

Since this paper was written the results of the School Certificate Examination have been published, and it may be interesting to note :—(1) whether the results were in advance of those of previous years ; (2) whether the diagnosis, conducted fifteen months previously, predicted successfully the achievements of the pupils in the actual examination.

Twenty-six pupils took the examination. Eight gained distinctions in mathematics, fourteen obtained the " credit " mark (matriculation standard), and the other four passed. In the three previous years all the candidates passed in mathematics, and the number of distinctions gained were 3, 3, 2 respectively. In short, there was a great improvement in the results of those boys who were above the average in ability, but no appreciable gain in the results of the poorest pupils of the form. With regard to the second point, the results of individual pupils were very much in accordance with those anticipated from the mental tests and mathematical tests.

The table below shows the positions in the five mental tests, that correlated highly with mathematical ability, of the four boys who failed to secure " credits."

POSITIONS IN FIVE MENTAL TESTS.

A	17½	26	25½	20½	28
B	8½	26	25½	14½	19
C	21	24	28	23½	17
D	28	19	13½	25½	26

It will be seen that the inferior ability of the boys is clearly indicated. They received far more than their fair share of individual instruction and in return worked very hard, but in spite of this they were unable to acquire real proficiency in the subject.

In conclusion, I wish to express my thanks to the head master of the school for allowing me to carry out the investigation, and to Professor Valentine for many valuable suggestions.

Spiritual Values in Adult Education.

By Basil A. Yeaxlee. (Oxford University Press, 1925. Vol. I. Pp. xiv+320. 10s. 6d. Vol. II. Pp. xii+455. 15s.)

THIS is the most important book on " Adult Education " that has appeared since the Final Report of the Adult Education Committee in 1919. It is, indeed, supplementary to that report, as is implied by its sub-title : " A Study of a Neglected Aspect." No previous survey of the movement " deals fully, if at all, with the activities of the Churches and kindred organizations." This book, accordingly, arose from an attempt to fill the gap. But in the course of his inquiry Dr. Yeaxlee found that " No section of adult education can profitably be treated by itself. The relation of this work to the rest, the history of the movement as a whole, and the philosophy of adult as distinguished from other stages of education all challenged thought."

It will thus be seen that, although the book was written to uphold a definite thesis, yet it is far more than a piece of party pleading. The thesis is there, all the time ; and, occasionally, it is too obtrusive. But, taken as a whole, the book is one of the utmost value for all concerned with adult education. As a storehouse of information, both historical and contemporary, it stands alone ; whilst the author's discussion of the philosophy of education, his criticisms, and constructive proposals, are stimulating and suggestive : it is to be hoped that they will be considered by those to whom the greater part is addressed—the religious organizations.

For the " neglected aspect " may be interpreted in two ways. Writers on adult education have, perhaps, neglected the work done by the Churches ; but far more serious is the neglect of adult education by the Churches themselves. Dr. Yeaxlee gives an admirable account, filling 200 pages, of " adult educational activities in Churches and kindred organizations " ; yet he has to state " that the one fair deduction from the facts, so far as they have been ascertainable, is that the Churches are not altogether blind to their responsibilities, and are expending a considerable amount of energy, but that far more system is needed if their educational work is to be adequate. Though the energy now displayed would certainly, if rightly directed, go far towards carrying through a more satisfactory educational programme, they must be prepared to make still greater demands upon their resources of time, personnel, premises, and money, if they are to accomplish their share of this great common task. Moreover, while they may be right in recognizing their own limitations, and in looking to kindred organizations established mainly or wholly for the purpose of adult education as the proper agencies through which much that is now neglected ought to be achieved, such an attitude is not in itself sufficient ; there must be actual consultation and real co-operation ; mutual respect and toleration will not avail even as substitutes. But before trying to effect such a working partnership with their natural allies, the Churches must bring about greater unity of purpose and effort among themselves ; the " unhappy divisions " to which they are wont to refer with pious resignation must go if their own specific job is to be done." (Vol. II, p. 191.) Such criticism is sound and helpful ; it is better justified than the attitude taken in the first part of the book, where Dr. Yeaxlee throws the onus of "neglect" on the non-religious bodies. After arguing the value of religion, and particularly of the Bible, as a suitable study for adults, he concludes the section with these words: "Here, then, within the limits of their own direct and special interests, the Church and kindred bodies have a great province which should be associated with others in the republic of learning. They can produce, as material for education, treasures that owe nothing to any accidental setting and that are the birthright of every man and nation. They come to participate in adult education, but not as mendicants or pensioners; they bring a rich contribution. And those who refuse to share it because of prejudice (perhaps as pardonable as it is explicable) against old dogma, fear for their own intellectual integrity, or passion for what is practical, are committing educationally the sin of Esau." (Vol. I, p. 149.) The obvious retort is to ask whether the sin of Jacob was not worse; for if, as the author proves, the Churches have fallen short in their duty of adult education, if they have not shared their treasures, then, surely, they have stolen their brother's birthright.

The more theoretical arguments which Dr. Yeaxlee adduces in his opening section lead one to the same result. Thus he shows (to take but one example) that "true" religion and "true" education are inseparable, and, indeed, identical. By a sufficiently general definition of each term, he naturally reaches this unassailable position. But does it really help? He rightly emphasizes the distinction between "religion" and "a particular creed or type of conduct" with which it so often is confused. Such confusion seems to be inevitable while the word "religion" is used to cover two quite different senses. If it means "no more than a belief in spiritual things as ultimately real" (a definition by Dr. Norwood, which is quoted with approval), then it cannot at the same time mean the superstitions and prejudices which in point of fact constitute the "religion" of most people. Dr. Yeaxlee writes that the Church will "be ready to recognize all truth, whatever may be the voice that utters it. She will welcome, as essential to the well-being and progress of her own cause, all forms of education that are sound and fruitful." If these sentences imply a pious hope, they may pass; otherwise they are so glaringly untrue as to need no refutation. Whilst agreeing with the author that "true" religion is spiritual, one is compelled to insist that such religion is not that of the religious bodies; indeed, those who have such religion find themselves less and less able to remain members of the bodies. Vested interests, particularly the financial, thus tend to get more and more into the hands of those whose conception of religion is least spiritual. Hence, even Dr. Yeaxlee seems not altogether to avoid the confusion between the two meanings of "religion" when, *e.g.*, he writes: "If education in the 'secular' sense drives men and women back to the consideration of such problems as are really religious in their nature, however they may be described, those who are concerned primarily with adult education should honestly recognize the place of *religion* in life, the function of *religious* societies, and the necessity of co-operating with them." In this sentence the words that I have italicized bear a meaning quite different from the preceding "really religious in their nature"; hence the second half of the sentence does not follow from the first. Dr. Yeaxlee then concludes Chapter III : " If religion is to be serviceable, and education is to emancipate the spirit of man, their relationship must be understood and made effective. They must become allied forces, each able to count upon the other in attaining victory over ignorance, prejudice, materialism, cynicism and selfishness." Since religion in the " true " sense cannot by its nature need reform, it is plainly the religious bodies that must be made serviceable in their co-operation with the agencies for adult education.

How this is to be brought about is discussed by Dr. Yeaxlee in his chapter on " Policy and Programme." He shows that the plan of the Graded Sunday School might be extended to adult education. More use should be made of laymen, particularly of women ; it is a fallacy (as he points out) to suppose that a gifted woman cannot deal successfully with a class of adult men. Further, adult classes should be run concurrently with Sunday services, it being a " fiction " that many people will attend more than one service in the day. (Vol. II, p. 196.) Such classes could be improved by co-operation between various Churches, which would take the form of joint programmes, interchange of students, conjoint training of teachers, etc. The chapter abounds in sensible suggestions of this kind ; if they were carried out, they would very greatly extend the present field of adult education.

But the need for unity, for " integration " (to use the author's word) is not confined to the religious bodies. Such integration does not mean the suppression of individual differences. These varieties of outlook are required if all classes of people are to be brought in. A step towards such integration is that foreshadowed in this book and actually taken since it was written, the agreement by which the Trades Union Council will conduct its educational work through the medium of the W.E.A., the Labour College, the Co-operative Union, etc. Whether this agreement will work out exactly as those responsible for making it hoped, remains to be seen. If if leads to difficulties, they will be due to causes that are in no sense educational : the idea behind it was sound, and in the long run it will certainly be justified. In passing, one may call attention to the sympathetic account of the N.C.L.C. and the Plebs League given in the chapter on " The Current Situation." The dispassionate discussion of their policy is most admirable.

Another direction in which integration is evident is the Educational Settlement, or " Guildhouse " (to use the name adopted by the British Institute of Adult Education in its report on the subject). There is no doubt that this is the most hopeful line of advance in adult education. Isolated tutorial classes are excellent things ; but there is always a feeling that they are " in the air," that they are dealing only with one side of the students' nature, unless there is some sort of collegiate atmosphere. This truth was fully understood by Maurice and the other pioneers of the most famous of all ventures in adult education. Nor is the need for corporate life confined to adult education of what Dr. Yeaxlee calls the " University " type : in the " secondary " and " primary " grades also it is increasingly recognized, and a large amount of valuable work is being done through Women's Institutes and Rural Community Councils. There are now fifteen settlements affiliated to the Educational Settlements Association, as well as three colleges (Woodbrooke, Fircroft, and

Beckenham), " so that from the simplest group to the year's course at a residential college there is a natural highway." " Their aim is not to provide one type of activity or to meet the need of one particular class or group in their neighbourhood, but to create, primarily by the co-operation of all existing autonomous organizations, for any form of adult education, a corporate expression of the spiritual, intellectual, and social life of the community." (II, 102.) As Secretary of the Association, Dr. Yeaxlee is particularly qualified to speak of the Educational Settlements —though he is not able to say how much they owe to his energy and enthusiasm.

Space does not allow more than a reference to other parts of the book. In the first section the author deals in a persuasive way with the philosophy of education, starting from Albert Schweitzer's remark that " Our loss of real civilization is due to our lack of a theory of the universe." After dealing with various interpretations of the word " spiritual," Dr. Yeaxlee naturally proceeds to a discussion of Personality. The few pages devoted to the psychology of this subject are rather inadequate ; but a full discussion of the problem, as complicated by modern research, would have overburdened this part of the book. His general conclusion, however, "that in personality lies the power of the individual at once to stand apart from all other persons and things in the universe and to relate himself to them " (I, 23) will not be disputed.

The second section, " A Glance at History," will doubtless appear to many readers the most useful part of the work. As part of the general thesis, its purpose is to show that " the spiritual character of each movement " has been " a decisive factor in its history." But much illustrative detail is supplied, particularly about the early Adult Schools, the Co-operative Movement, the Mechanics' Institutes, the Sunday Schools, and the People's Colleges. One is grateful (*inter alia*) for copious extracts from Pole's and Hudson's almost inaccessible histories of Adult Education. When a complete history of the movement comes to be written, this section will be a great help to the writer.

Altogether, Dr. Yeaxlee has made a valuable contribution to the cause of adult education. Few living people have wider experience of the movement, and every chapter of this book is based upon first-hand knowledge.

F. A. CAVENAGH.

The Young Delinquent.

By Cyril Burt, M.A., D.Sc. (University of London Press. Pp. xiv+643. 17s. 6d. net.)

This is undoubtedly a remarkable book. It provides in a most unusual way valuable information in the form of exact and carefully-analysed statistics, and, at the same time, fascinating sketches of individuals, carefully studied by the writer; and with all the facts and figures and tables and curves the author reveals his intense and human interest in the welfare of the unhappy creatures he has made his special study. His object is the cure of souls. But he declares emphatically at the outset that "not before causes have been discovered can cures be advised."

Dr. Burt's method was to study cases of young delinquents individually and, as far as possible, personally. The exact nature of the deed, the time and place, were noted; the offender's personality, body and mind, his general intelligence, habits, interests, etc., were all studied. Then his environment was examined: home conditions, district, school, employment, etc. Records were also kept of treatment and results.

In this way two hundred cases of delinquents were studied, and as a contrast groups of similar statistics were gathered as to four hundred non-delinquent children living in similar homes and in the same districts.

In the majority of the former cases, the children had never been formally charged with any crime; and Dr. Burt puts in a strong plea for dealing with cases as young as possible, because they are both easier to study and easier to cure.

Though the book offers a great deal by way of statistics, the author is fully aware of the dangers of unanalysed figures. This is well illustrated by the treatment of the influence of climatic conditions on crime. Very misleading generalizations might be made if we simply take the figures for crime in general and the month of the year, or the amount of daylight or sunshine. But when analysed more thoroughly the figures are sometimes suggestive. The correlation between sunshine and sex offences, for example. is +0.87; between sunshine and theft —0.88. The high position of theft in winter months is attributed not merely to cold, but, on the basis of the study of individuals, to the temptations due to the display of Christmas and New Year gifts; while increased damage to property is not a curious outcome of exasperation with November fogs but is traceable to the excitements and traditional celebrations of Guy Fawkes Day.

As the result of the study of his figures in reference to heredity and delinquency, Dr. Burt sums up against the view that heredity is a predominant factor in causing crime. Removal to another environment often brings in the young delinquent an "immediate and complete reform." Of Burt's 200 delinquents, only 11 per cent. had relatives actually sentenced for crime. "Temperamental disturbances with moral symptoms" occurred much more frequently, while "minor lapses in moral behaviour" appear in the families of 54 per cent. In the tables of statistics the most striking difference between hereditary traits appearing in young delinquents as compared with non-delinquents, are:

Sex irregularity in mother	Delinquents, 18%	Non-Delinquents, 4.0%
Alcoholism in mother	,, 12.2%	,, 3.2%
Alcoholism in father	,, 13.7%	,, 5.7%

When an hereditary trend is in evidence, it may be, as Dr. Burt rightly points out, an underlying weakness which favours a criminal tendency and not in the full sense a " moral taint." Indeed, may we not go further and say that sometimes a quality *A*, which may be in itself a lovable virtue when held in check by qualities *B* and *C*, may actually be conducive to crime, when unaccompanied by *B* and *C*.

Of environmental influences, that of the home is first considered. Poverty is obviously, as we should expect, one influence. In the thirty-two cases of young delinquents, whose homes fell below the " bare subsistence " level, 81 per cent. of the crimes were cases of theft. Yet although 50 per cent. of Burt's delinquents came from " poor " or " very poor " homes, while only 30 per cent. of London's population as a whole do, it has to be admitted that, as half these young delinquents come from homes described as " comfortably off," poverty cannot be the most influential cause.

Defective family relationships are important influences. Apart from trouble due to alcoholism (chiefly significant as a symptom of a more ultimate cause), ceaseless friction in the home and such various troubles as are accentuated by over-crowding, are frequently associated with criminal tendencies in the children of such homes. Excessive severity of home discipline was reported in 10 per cent. of the cases studied, but laxity of discipline seems more injurious, as it appears in one out of every four cases, the highest correlation with any one factor.

While pointing out some important ways in which vocational maladjustment may lead to crime (when, for example, the youth is not equal to or is unnecessarily intelligent for his job), Burt sums up decidedly in favour of the view that home conditions are far more influential.

After environmental influences, physical conditions are considered. The most notable point, perhaps, is the induction that even temporary ill-health, by resulting in backwardness at school, may help to bring about a state of disheartenment and discontent that facilitates crime. Young delinquents, as we find in the succeeding chapters on " Intellectual Conditions," are found to be educationally backward far more frequently than they are estimated as mentally defective. The importance of the influence of " vacancy of mind " and of a lack of even moderately intellectual interests, may be commended to those who think that our young people can safely be left with no further education at fourteen years of age, and that before then they need only study such subjects as are needed to fit them for work in office or workshop.

As to the influence of instincts and emotions, the author has much of value to say. In particular the unhappy consequences of general emotionality or instability should be carefully considered, as should the influence of excessive development of individual instincts, though Burt holds the view that, usually, most instinctive impulses are found in excess if one is. The following figures show the significance of such emotional excess, which Burt calls in its worst form "temperamental defectiveness," in milder forms "instability."

	Ordinary population.	*Young delinquents.*
No. temperamentally defective	1½%	9%
No. "unstable"	10%	34%

Burt remarks that excess of emotions and instincts tends to go in groups—the sthenic emotions and the æsthenic emotions forming two groups, one of which tends to develop, as a group, to excess; and that the æsthenic group tends to restrain the sthenic—a view which it seems difficult to reconcile with his view of "general emotionality."

I have said little of Professor Burt's discussions as to the treatment of cases, which are appended to each chapter. They are full of wisdom and common sense, as well as of cautious inferences based upon the examination of causes. Naturally there are more occasions here for differing from the writer, as some students of criminology will do. The methods of sublimation and their difficulties, and the reasons for choosing instead, on occasion, the method, if not of repression, at least of avoidance of stimulus, on these points one would at times have been glad of more detailed psychological analysis from the author's competent pen. So complex and variable is human nature that very varying treatment seems to suit apparently similar cases. But Professor Burt is, of course, fully aware of this; indeed, he stresses throughout the necessity for personal study of the individual child and for watching carefully the effects of different kinds of treatment.

Enough has been said to show that this book is full of points of interest, not only for the study of criminology and the social worker, but for the teacher. Confessedly it does not attempt to go deeply into ultimate psychological or philosophical problems. The author has tried to write, he says in the preface, in "plain and popular language," and he has succeeded. "Delinquency," he says, "I regard as nothing but an oustanding sample, dangerous perhaps, and extreme, but none the less typical, of common childish naughtiness."

To the sympathetic as well as scientific study of erring childhood this book is a most notable contribution; and in spite of the danger of the student mainly of abnormal children getting a warped idea as to more normal ones, the book is full of suggestion even for the understanding of children of healthier minds, of better character, and of happier homes.

C. W. Valentine.

Book Reviews.

Annals of Eugenics: Edited by Karl Pearson, assisted by Ethel M. Elderton. Issued by the Francis Galton Laboratory for National Eugenics, University of London. Vol. I. Parts I and II. 256 pp. October, 1925. (Cambridge University Press. Price 35s. net.)

From the Galton Laboratory has been issued the first number of yet another of the series of volumes and periodicals under the editorship of Prof. Karl Pearson, to whom workers in so many fields are deeply indebted for his development of modern statistical methods. The new journal is entitled *Annals of Eugenics*, and its object is to publish papers dealing with problems of race in man, the work of trained scientists, rather than propagandists and *dilettanti*. The first paper, by Prof. Karl Pearson and Miss Margaret Moul, is of interest to readers of the FORUM OF EDUCATION, for in it the writers deal with data relating to some 1,200 boys and girls aged 7—15, from the Jews' Free School, Aldgate, collected there before the war. We shall refer only to the sections relating to schooling and intelligence—physique and habits form a large part of the 100 or more pages, but cannot receive any notice here. Intelligence was measured by the Biometric Laboratory scale, which is as follows :

Mentally defective.—Capable of holding in the mind only the simplest facts, and incapable of perceiving or reasoning about the relationship between facts.

Slow dull.—Capable of perceiving relationships between facts in some few fields with long and continuous effort, but not generally nor without much assistance.

Slow.—Very slow in thought generally, but with time understanding is reached.

Slow intelligent.—Slow generally, although possibly more rapid in certain fields ; quite sure of knowledge when once acquired.

Fairly intelligent.—Ready to grasp and capable of perceiving facts in most fields ; capable of understanding without much effort.

Distinctly capable.—A mind quick in perception and in reasoning rightly about the perceived.

Very able.—Quite exceptionally able intellectually, as evidenced by the person's career or by consensus of opinion of acquaintances or by school record in the case of children.

This scale can be shown to agree fairly closely with that of the L.C.C. Pioneer Survey of 1904. It is claimed that it is sensibly independent of age, the correlation coefficients being +.06 (boys) and —.02 (girls), and in the first case the whole of the correlation is due to the difficulty in determining the intellectual ability of children of eight.

The chief conclusions are :—

(1) There is some but not a very marked relation between literacy of parents and intelligence of the children ($r = .12$ or .14).
(2) The correlations between intelligence and conscientiousness are of order .5.
(3) Among alien Jewish children there is a far smaller percentage of keen conscientiousness, but there is also a smaller percentage of dull conscientiousness.
(4) The intelligence scale above gives a correlation of .6 or .7 with place in class.

Correlations are worked out between intelligence and place in class and other variables, such as size and place in family (first-born, etc.), food, ventilation of house, personal cleanliness, tonsils, anæmia, stature and nutrition, but in all these cases the values are insignificant. There are slight but possibly significant values of r in the following cases :

(1) Eye colour (the lighter-eyed boys may be slightly more intelligent ; $r = -.1200 \pm .0466$).
(2) Hours of sleep (the mentally-brisk stay about half-an-hour less in bed than the dullards).
(3) The dull boys show a somewhat marked excess of carious teeth.
(4) There may be a very small dependence between shape of head and intelligence.
(5) It seems probable that girls are slightly more sensitive to environmental influences (maximum value is $+.1339 \pm 0492$ for intelligence and family income).

(6) Correlation between mouth breathing and low place in class (boys) is $.1208 \pm .0498$.

(7) Correlation between age and place in class is $+.0573 \pm .0276$.

On the question of relative intelligence of alien Jewish children and native Gentile children the writers say that " We are able to assert reasonable equality between Gentile boys and girls (in mother wit) ; this equality seems wholly wanting in the case of the alien Jews."

We give their Table (CXLIV) and conclusions.

DISTRIBUTION OF INTELLIGENCE IN LONDON SCHOOLS.

(Percentages.)

	Boys.			
	Very Able & Capable.	Intelligent.	Slow.	Dull and Very Dull.
Gentiles—Better Schools ..	18.6	34.8	23.1	23.5
,, Medium ,, ..	21.3	37.2	24.7	16.8
,, Poor ,, ..	15.6	32.3	23.5	28.6
,, Gilby's Data	25.1	31.0	23.6	20.3
Alien Jews	16.0	36.2	34.7	13.1

	Girls.			
	Very Able & Capable.	Intelligent.	Slow.	Dull and Very Dull.
Gentiles—Better Schools ..	13.9	34.6	25.0	26.5
,, Medium ,, ..	12.4	41.4	32.5	13.7
,, Poor ,, ..	15.8	37.2	29.4	17.6
,, Gilby's Data	—	—	—	—
Alien Jews	7.5	25.5	37.8	29.2

" An examination of this table shows us at once that the Jewish girls have less intelligence than the Gentile girls in any type of Council School. The comparison of the Gentile and Jewish boys is less clear cut ; the latter may be judged somewhat less intelligent than Gilby's sample, which was classified by the same scale as the alien Jewish boys. They are not so good as the boys of the medium or average schools, but are better than the boys of the poor-type of school."

It will be seen that the paper so far as published is very thorough ; it runs to over 120 pages and 150 tables, and the stock of statistical weapons in the armoury of these writers is amazing. It is difficult to offer any criticism of value, though some of the results will surprise those who have taught Jewish children, whether in Jewish or mixed schools. But we may, perhaps, point out one comparatively minor feature. In any particular " class " (division of school organization) several writers have found an appreciable negative correlation between place and age. Thus the average place of boys aged seven may be 20, and of boys aged eight may be 30 in a class of 50 boys between this age range seven to eight. We should get similar things for every other class—*e.g.*, that aged 14 to 15. When we take all together, we get for our contingency table : between age and place in class the average place of boys aged 7 is 20, and of boys aged 15 is 30, and the regression is nothing like such a steep line now the boys are drawn from all the different classes. r may be the same, but the σ for age is now much larger, so that the regression equation will apparently give a much smaller negative relationship between age and place in class than that for any one class in particular. And it is the former combined relationship that is used by the authors of the paper we have been considering.

The Metaphysical Foundations of Modern Physical Science : A Historical and Critical Essay : by Edwin Arthur Burtt, S.T.M., Ph.D., Assistant Professor of Philosophy in the University of Chicago. (International Library of Psychology, Philosophy and Scientific Method. London : Kegan Paul, Trench, Trubner and Co., 1925. Pp. ix+349. 14s. net.)

At the present time, as everyone knows, the classical view of the physical universe associated with the name of Newton is being subjected to fundamental criticism ; and so many beliefs that are part of the ordinary educated outlook on the world are imperilled by the criticism that it is a little difficult for the ordinary educated man to know where he is.

He has become so accustomed to think of space as having a perfectly uniform nature, which is unaffected by the bodies which move in it, and of time as simply flowing on, the same everywhere, passing inexorably, but not affecting any measurements which belong to space itself. He has been brought up to think that when bodies move in space they do not affect the nature of space itself, and are not affected by it ; and that in consequence, if they move in anything but straight lines and with anything but uniform speed, this must be because they are subject to certain forces.

And so, when he hears that in the new theory of relativity which Einstein has fathered these things are denied, apparently with the consent of the majority of scientists, his interest and curiosity are aroused ; but his endeavours to understand are checked at the outset. For in the new view space and time and bodies and movements seem so mixed up and forces seem to be treated so strangely that there seems nothing concrete left to take hold of.

One of the simplest ways of meeting the situation is to familiarize oneself with the notion that what seems to us nowadays so clear and intelligible was, at one time, not a part of the ordinary educated view of the world at all. And the best way of doing this is to study the history of the steps by which the modern view of the world came to be adopted.

This method has the advantage of helping the inquirer to face another perplexity which modern science has always brought, and which the new views do nothing to remove. Both accounts seem to make it clear that the main happenings in the physical universe go on entirely without any intervention of consciousness, and, indeed, make that consciousness itself—especially the mind of man—a serious problem. A creator of the material world as a whole there might be ; but what could created, non-creative minds do in a world which runs so smoothly without providing any levers for minds to pull ?

In this, as in the other problem, it is necessary to stand a little loose from the world as interpreted by science, and to see how much the scientific account assumes, and how many of its assumptions go beyond what is strictly needed in order to allow it to go on with its work.

Now it was in the seventeenth century that the discussions took place which led to the establishing of the point of view which gave us modern science ; and to follow these discussions is a very valuable aid to the clearing up of the whole situation. No better guide to this could be found than that provided by the present book. It comes opportunely, as a readable account, based on the original sources, of the history of these discussions.

Histories of this period from the standpoint of science, or from the standpoint of philosophy, we have had before. Professor Burtt's history differs from the previous ones in the way in which it blends science and philosophy ; and in this lies its great value.

The movement begins in Copernicus, Kepler and Galileo, and culminates in Newton—all scientists ; but it results from discussions which are not only scientific, but metaphysical : which, that is to say, not only consider facts, and generalizations from facts, but also endeavour to outline the main features which the universe must have if it is to be intelligible. And it results in something which is not pure science, but metaphysics as well.

Professor Burtt's thesis is that Newton " had a most important metaphysic," partly incorporating the ideas of his age on ultimate questions, partly taking the needs of his method as indications of the nature of the universe, partly allowing his religious views to colour his assumptions. That, while his theology was rejected by the age of reason which succeeded him, the "rest of the new metaphysics . . . as further developed at his hands, passed with his scientific exploits into the general current of intelligent opinion in Europe, was taken for granted because insinuated without defensive argument, and borrowing an unquestioned certainty from the clear demonstrability of the mechanical or optical problems to which it was attached, it became the settled background for all important further developments in science and philosophy. Magnificent, irrefutable achievements gave Newton authority over the modern world, which, feeling itself to have become free from metaphysics through Newton the positivist, has become shackled and controlled by a very definite metaphysics through Newton the metaphysician" (227-8).

With this thesis the present reviewer is largely in agreement; and the exposition of the sources of Newton's metaphysic constitutes the great achievement of the book. The picture as a whole had already been painted by Höffding, in his magnificent "History of Modern Philosophy," but Professor Burtt, by limiting his treatment to the sources of Newton's views, has been able to include a fuller account of such English thinkers as Henry More, Barrow, and Boyle, and to give adequate space to Newton himself.

Professor Burtt is always interesting and provocative, however much one may differ from him in detail. His account begins with Copernicus and Kepler, Galileo and Descartes on the Continent, and then the story passes to England, and shows how in Hobbes, More, and Barrow, Gilbert and Boyle, Newton found the sources of many of his metaphysical and scientific views. The account in the main is trustworthy, although many of the generalizations are rather light-heartedly made, and the picture of modern science should be supplemented by a study, on the part of the reader, of Continental metaphysicians and scientists later than Descartes. There are places at which the work needs rather careful revision, notably the account of Mass (238-243), where the suggestion of Boyle's influence, though itself a minor matter, seems to indicate ignorance of the significance of the investigations of Huyghens, Wren, and Wallis regarding the laws of motion of colliding bodies. But the book as a whole is a notable contribution to the history of science. The author is to be congratulated on the clearness of his accounts, and on the skill with which he has succeeded in letting the various thinkers tell their story in their own words, while preserving his critical attitude, and keeping his thesis as a whole in view.

L. J. Russell.

Robert Owen: by G. D. H. Cole. (Benn. 15s. net. Pp. 267).

This volume, the first of a series rather unhappily named "Curiosities in Politics," will no doubt become the standard life of Robert Owen. Though concise, it is so well written as to interest the general reader; and as a critical study it stands alone.

This short review must be confined to the chapter already familiar to readers of the *Hibbert Journal*, dealing with Owen's ideas on education. It contains a brief account of Owen's schools; for details we must still go to the original sources, or to the copious extracts from them in Podmore's chapters on New Lanark and New Harmony. The value of Mr. Cole's chapter lies in the extreme clarity with which he expounds Owen's educational ideas and links them up with his life-work. "The basis of Owenism was his theory of education as a means to the formation of character and the possession of happiness . . . It had power, be believed, to reconcile all differences, to destroy the rivalries of class, creed and country, to make of the world a single Co-operative Commonwealth united by the bonds of reason and affection."

In particular, Mr. Cole demolishes two common misinterpretations of Owen's ideas:

(1) That he held that individual character, even the adult's, can be moulded to any desired shape by environment;

(2) That, in his emphasis on environment, he entirely ignored heredity.

On the contrary, as Mr. Cole points out, what Owen said in his famous sentence was that "Any character, from the best to the worst, from the most ignorant to the most enlightened, may be given to any community, even to the world at large, by applying certain means, which are to a great extent at the command, and under the control, or easily made so, of those who possess the government of nations." And again: "Children are, without exception, passive and wonderfully contrived compounds, which, by due preparation and accurate attention, founded on a correct knowledge of the subject, may be formed collectively into any human character." Even when (as in his "Autobiography) he seems to speak of individuals—" On the experience of a life devoted to the subject, I hesitate not to say that the members of a community may by degrees be trained to live without idleness, without poverty, without crime, and without punishment "—they are still regarded as " members of a community." As for the influence of early years, Owen writes as emphatically as a psycho-analyst : " Much of the temper or disposition is correctly or incorrectly formed before he (the child) attains his second year ; and many durable impressions are made at the termination of the first twelve or even six months of his existence." His practice of setting up infant schools wherever he went is even stronger evidence of his belief in the need of educating (or " forming the character," as he would have said) aright from the first. Yet the failure of New Harmony was put down by Owen's sons to departure from this principle. " Our own opinion is that Robert Owen ascribed too little influence to the early anti-social circumstances that had surrounded many of the quickly collected inhabitants of New Harmony before their arrival there, and too much to those circumstances which his experience might enable them to create round themselves in future."

On the second point—it is clear that Owen did not altogether neglect differences due to heredity. His best-known saying, " It is of all truths the most important that the character of man is formed for and not by him," was a tilt, not at heredity, but at religion. And Mr. Cole appositely quotes the passage : " Man is born with combined propensities and qualities, differing in degree of power and in combination, sufficient to create through life individuality and distinctness of person and character. But, however much the power and combination of these propensities and qualities may differ in individuals at birth, they may be all so directed by subsequent circumstances as to be made to form general characters, and these characters to be of the most opposite nature—even to be made entirely irrational or rational." Certainly Owen himself illustrated the importance of each side. His early environment in Newtown could not have made him one of the greatest figures of his time. Yet if he had been better educated he might conceivably have thought with greater balance and coherency. Francis Place found him ignorant and dogmatic. " Mr. Owen then was, and is still (1836), persuaded that he was the first who had ever observed that man was the creature of circumstances. On this supposed discovery he founded his system. Never having read a metaphysical book, nor held a metaphysical conversation, nor having ever heard of the disputes respecting free-will and necessity, he had no clear conception of his subject, and his views were obscure. Yet he had all along been preaching and publishing and projecting and predicting in the fullest conviction that he could command circumstances or create them, and place man above their control when necessary. He never was able to explain these absurd notions, and therefore always required assent to them, telling those who were not willing to take his words on trust that it was their ignorance which prevented them from assenting to these self-evident propositions."

But, whatever judgment may be formed of Owen's educational ideas—and Mr. Cole shows that they were saner than is commonly supposed—his methods were surprisingly modern. The importance given to play, to dancing and physical training; the pleasant saying that " the children were not to be annoyed with books " ; the happy atmosphere of freedom—these are features that not only disappeared from the infant schools set up by his cantankerous plagiarist Wilderspin, but which are never so clearly found again till the nursery schools of our own generation. To quote Mr. Cole : "As an educationist, in both theory and practice, I think he had in him the root of the matter."

F.A.C.

A Text-book of Experimental Psychology. Part II : Laboratory Exercises : by C. S. Myers and F. C. Bartlett. (Cambridge University Press. Pp. 121. 7s. With Part I Text-book, 16s.)

This third edition of Part II of Dr. Myers' well-known book is indispensable to any serious student of Experimental Psychology. The matter is, as before, trustworthy, concise, and clear. New experiments have been incorporated. These deal especially with the higher mental function, and have been devised by Mr. F. C. Bartlett. The additions, which are welcome—indeed, necessary, in view of the progress of the subject—have involved an advantageous rearrangement of the old material. An index to Part II would have facilitated cross-reference from Part I.

F. M. R.

Felix Boillot, Quelques heures de français dans une Université anglaise. (Paris, les Presses Universitaires de France, 1923. 168 pp. 12 francs.)

In this charmingly written volume of collected papers the Professor of French at Bristol lifts a corner of the veil upon the manifold activities of a University French Department. In the midst of the busy and varied intellectual life which the teacher of a subject so humane must lead, Professor Boillot has paused to reflect upon his art.

In his Introduction he sets forth the principles which must govern the activities of such a department as his: Search after truth, though sometimes it be only the truth of detail; neglect not general culture; discipline the mind; discipline the character. With these high principles none will quarrel; the only difficulty is to carry them out. It is not too much to say that in what follows Professor Boillot does carry them out, not always with the gravity which the earnest introduction might lead us to expect, but always with sound common-sense and much learning, well seasoned with French wit and British humour.

The art of French essay writing is taught in the course of an amusing colloquy between the Professor and the humblest of all his disciples, those whose attainments hover uneasily around the matriculation standard. The theme is "La Mort d'un Chêne," and it is demonstrated to the satisfaction of all that half the essay can be drawn out of the words "La Mort" and the other half out of the words "un chêne"—to which we would only add that in the resulting essay there are delightful literary allusions and glints of poetry unaccounted for by these four words. We can hardly believe that they are implicit in the fifth word, *de*, which is not discussed, and are driven to conclude that it is easy to draw from the title a brilliant essay deserving even more than full marks, when Professor Boillot is there to help.

With much skill and judgment—and not without a little chopping of logic and splitting of hairs, a salutary exercise in which the clear-cut precision of French corrects British vagueness—Professor Boillot proceeds to analyse La Fontaine, weigh Chateaubriand in the balance as a translator of English (and find him sadly wanting), expound the advantages of the *fiche* system, do two *explications de texte,* one of Lamartine and one of Anatole France, study the mysteries of French prosody and translate admirably, and with full discussion of variants, Corneille ("Psyché") and Dickens ("Pickwick Papers"). All this is in the best Sorbonne manner, and crowned by a final chapter of artistic appreciation—discussion of a picture by a Dutch master, of which a very beautiful reproduction is given in colour.

Professor Boillot, by thinking aloud, has given us an instructive and cheering work. It enlightens the educational public on the character and aims of much of the teaching in what are now among the largest and most important departments in the Arts Faculties of the Universities and are rapidly becoming a power in English education. It shows that in Bristol at least that teaching is very far removed indeed from the narrow conceptions of the past which the Government Committee on Modern Languages condemned. It reveals a bright present, and heralds a brighter future for French as a University subject.

R.L.G.R.

The Elementarie: by R. Mulcaster, 1582. Edited and introduced by Professor E. T. Campagnac. (Oxford: University Press. Pp. xxiv+292. 10s. 6d. net.)

One of the marked features in the modern method in teaching history is the reference constantly made to original sources; those who bring these within the reach of students deserve their gratitude. With characteristic British self-depreciation, Mulcaster has been comparatively neglected while the works of foreigners have been held in high esteem. It is with surprise that many people discover the "modern" nature of many of Mulcaster's ideas on organization as set forth in the "Positions"; the less well-known "Elementarie," which is presented to the public once more by Professor E. T. Campagnac, reminds us that Mulcaster was a practical teacher who, in making a claim for attention to be given to the study of the Mother Tongue in an age in which he thought English had reached its perfection, had formed very definite opinions on the mode by which the study should be carried out. But the "Elementarie" should be read not only for the shock of discovery that what Mulcaster thought in 1582 is in great measure what we think in 1926, nor to make us marvel that he lived three and a half centuries in advance of his time; it contains suggestions which may be of practical use to the teacher and so the book is a manual of method. The reprint is done nearly in the form of the copy now at the Bodleian, and has, on that account, a peculiar interest.

A. P. B.

The Fundamentals of Statistics : by L. L. Thurstone, M.E , Ph.D. (Macmillan, 1925. xvi+237 pp. 8s. 6d.)

Professor Thurstone writes this introduction to statistical method having in view the fact that so many students approach educational psychology after a course of literary or philosophic studies, with a very slight equipment of mathematical experience. The work represents the course which he has worked out for a class of graduate students of experimental education who require to interpret the results of mental and scholastic tests. Mathematical terms are as far as possible avoided, Professor Thurstone's aim being to lead " unmathematically inclined students " to appreciate the logical implications of their statistical work. The terms in general use in statistical discussion, however, are naturally introduced and lucidly explained.

The ground covered includes the treatment of frequency tables, the various methods of graphical representation, the measures of general tendency and variability, and finally the probability curve and correlation. The student is not merely supplied with a formula and a set of directions ; the use of the different measures is discussed and illustrated, and the limitations of mere statistical correctness in the absence of correct experimental procedure are kept before the reader. This is particularly noticeable in the treatment of probable error, where Professor Thurstone is also successful in leading his " unmathematical student " through somewhat forbidding calculations without unduly alarming him. The illustrations are well chosen to show the practical bearings of the work, being drawn mainly from actual results of educational testing. Each chapter is followed by a set of problems designed to test the student's understanding of the new formula or method, and to help him to consolidate his knowledge. One criticism which might be offered is that the private student of mental measurement, for whom the book is also intended, would be grateful for a key to the problems—at least to those requiring a brief and definite solution.

The book is well supplied with tables and graphs which will prove valuable to students as examples of method ; it also contains a few larger tables for reference, *e.g.*, a table giving the ordinates of the probability curve. One feels that since the book is intended for reference as well as for teaching purposes, a short annotated bibliography might have been added. Also, since Professor Thurstone considers the directions for the use of a comptometer within his province, he might have included with them some reference to the use of the slide-rule, a device equally valuable and more within the reach of the amateur statistician.

As it stands, however, the book is one which may be heartily recommended to all who desire a simple introduction to the mechanics of educational measurement. It does not claim to replace the more advanced treatments of the subject by Udny Yule, Brown and Thomson, and others, but it should prove invaluable to the beginner in this field of work.

E.T.

Social and Political Ideas of Some Great Thinkers of the Renaissance and the Reformation : edited by F. J. C. Hearnshaw, M.A., LL.D. (Published by Harrap and Co., Ltd. Pp. 316. 7s. 6d. net.)

This is a series of lectures concerned with the ideas of some of the thinkers who inspired the age of the Renaissance and the Reformation. The topics and authors are : The Renaissance and the Reformation (The Editor) ; Nicolas of Cusa (E. F. Jacob) ; Sir John Fortescue (Miss A. E. Levett) ; Nicolas Machiavelli (The Editor) ; Sir Thomas More (A. W. Reed) ; Desirderius Erasmus (J. A. K. Thomson) ; Martin Luther (J. W. Allen) ; and John Calvin (Rev. W. R. Matthews).

That the series of lectures on Great Thinkers who have helped to mould our civilization has been continued is proof that they appeal to a number of citizens and that the Editor who is largely responsible for their institution realizes that there is a demand for lectures outside the classroom. Teachers and students of history will enjoy many of these essays, which help to crystallize one's views on the many problems of this period.

The essays suggest topics for investigation by serious students of history, while students of the history of education will find many sidelights on education during the period and an excellent summary of the sequence of changes leading to the remoulding of education.

A bibliography follows each essay. The publishers are to be congratulated also on the reduction in price.

A.E.C.

Things and Ideals : Essays in functional philosophy : by M. C. Otto. (Modern Thinkers' Library. Harrap, 1925. 256 pp. 5s.)

These twelve essays are intended to describe a form of social idealism which, recognizing equally the reality of things and ideals, is free from sentimentality and yet does not accept the material order as the pattern of life. The book falls into two comparatively disconnected parts : Chapters I-V discuss the need of a theory of life and the nature of morality ; Chapters VII-IX, XI and XII the relations between science and religion. Chapter VI on The Self and Chapter X on The Soul seem to have little connection with each other or with the remainder of the book.

The student of education will probably find the first part of the book the more interesting. The functions of philosophy are set forth clearly and attractively. The author then shows that all men try to realize ideals of one sort or another, and that the choice is between increasing possessions and functioning creatively in society. Morality, he holds, must aim at the richest possible attainment of satisfied wants, our own and those of others ; it operates with and for, not merely upon, the inclinations and desires of men. The criterion for deciding between conflicting desires is obtained by discovering the best kind of individual and social life through the study of man's original impulsive equipment, his desires and habits, and the purposes which are formed out of these in response to physical and social conditions. This discovery is the function of intelligence.

We feel that the author's conception of morality is vague and controversial. We may also reasonably doubt whether a conception of the best kind of life can be obtained from the source suggested and whether the aim and content of the moral life are not to be discovered elsewhere than in the inclinations and desires of men. Moreover, when the author tells us to learn from the study of man's past achievements and failures we would remind him that elsewhere he throws grave doubts on the possibility of tracing causation successfully in history. We are glad, however, that he forces us to realize the need of a consistent and comprehensive theory of life and that he emphasizes the importance of estimating the influence of the social environment as well as of congenital endowment upon man's actions.

The second part of the book is keenly critical and therefore interesting ; but it is nevertheless disappointing because of the negative result arrived at in the question of religion. The author apparently holds that religion should have no place in schemes for social reconstruction ; " we should assume the universe to be indifferent towards the human venture that means everything to us." But he fulfils his promise of stating his case with clearness and frankness, and we are grateful to him for a book which will provoke much thought on urgent problems.

G.H.T.

The Equipment of the Social Worker : by Elizabeth Macadam, M.A. (Published by George Allen and Unwin, Ltd. Pp. 224. Price 6s. net.)

The author describes the development of social study as a method of preparing men and women for the coming profession of social administration in all its forms, and suggests future lines of development.

After a short account of the Nature of Social Work and Social Training, the History of Social Training from 1890 to the present day is summarized. We are grateful, as this, the first detailed account, is given by two of the pioneers in the work, Miss Margaret Sewell and the author. Then follows a reasoned statement of the case for the University as the Centre of Social Study, in which it is shown that the University as well as the student gains if the former is the centre. The next three chapters deal respectively with Academic Study, Practical Work, and Training for Special Branches of Social Work. Chapter VIII is mainly concerned with the need for systematic social study for certain professions : The Church, Medicine, Education, and Law. Chapter IX gives a comparative account of the education and training for social work in America, Canada, and some other countries. The last chapter suggests lines of development in the future.

The book is written by one who speaks with authority and contains a straightforward account of existing demands and facilities. Though it is scarcely inspiring enough to be recommended to pupils who are inclined to undertake social work as a profession, it should certainly be read and kept for reference by those who have to help older adolescents to choose a career.

A.E.C.

The Scientific Study of Human Society : by Franklin Henry Giddings, Ph.D. LL.D. (Published by the University of North Carolina Press. England : Oxford University Press. Pp. 247.)

The purpose of the author has been to indicate wherein and to what extent sociology is a scientific study of human society. To this end he describes strict methods that can be utilized and points out the precautions and limits which must be observed in the use of each.

In the first chapter the idea of societal patterns is developed and illustrated ; in the second, " Societal Variables," the main changeable factors of human society are distinguished and the problem of discovering their correlations is stated and exemplified ; three generalizations are made which, according to the author, if true, " are damnatory against all programmes of communism and communistic socialism." The third chapter explains what is involved in the scientific scrutiny of societal facts and is followed by the author's classification of these facts. Chapters V and VI, " The Pluralistic Field and the Sample," and " The Study of Cases," give in condensed form principles which every student of human society should know and use. Chapter VII, " The Significance of Casual Groups," contains an interesting scheme for use in collecting and distributing data, together with many tabulated results of sample enquiries. Chapter VIII shows the importance of understanding the degree to which the societal process is telic. The remaining chapters are concerned with the scientific principles involved in valid inference from societal experimentation, exploration and survey, the measurement of societal energies and trends, and methods of measurement.

The book is a valuable exposition of the methods available for a scientific study of social problems, and should be studied carefully by all who are concerned with the thorough exploration of any social question. It is an excellent corrective for those who believe in short cuts to social reform though the necessity for " checking up " seems to be over-emphasized, especially as the principle does not appear to have been applied to the compilation of the index, which omits many topics discussed in the text—*e.g.*, aliens, degeneration, unemployment. A. E. C.

Education as the Psychologist Sees It : by W. B. Pillsbury. (Macmillan. Pp. ix+342. 8s. 6d.)

Following on a preliminary discussion of some simple statistical facts and methods and topics relating to intelligence comes a general discussion on topics important to teachers. Briefly, these are instinct, attention, memory, perception especially in regard to reading, practical aspects of reasoning, action and its connection with writing, feeling and emotion in relation to discipline and mental hygiene. Finally, there is a long discussion of formal discipline, and a summary of the means of measuring the attainments of the child in each of the disciplines of the elementary school.

Perhaps two of the most interesting and helpful chapters are The Laws of Learning and The Art of Study, and Reasoning and Teaching to Think.

The questions at the end of chapters are interesting and useful. In two respects Professor Pillsbury gives an excellent example to many American educational writers. The references, which are numerous, are not confined exclusively to American authors, and the book is not overburdened with physiological detail. F. M. R.

Social Psychology : Robert H. Thouless, Ph.D., M.A. (Published by University Tutorial Press. Pp. 376.)

The title of this book is somewhat misleading, for, as the author states in his preface, it deals largely with general psychology and only to a lesser extent with social psychology and economic psychology. This is partly accounted for by the fact that it is intended primarily as a text-book for a particular syllabus (sub-section psychology of the B.Sc. Economics Examination of the University of London) ; for this it appears to be better than a student who intends to rely on a single text-book deserves. The information is up-to-date, clearly expressed, and well arranged, though occasionally there is a lack of proportion—*e.g.*, laughter is treated at length for some eight pages, while the parental instinct is dismissed in less than two. The omission of a section on statistical methods is regrettable, and the book could be made more useful to the student who is working without a tutor by marking the more important articles and books of the 189 given in the Bibliography.

A. E. C.

Art and the Material (The Adamson Lecture for 1925): by S. Alexander M.A., LL.D., D.Litt., F.B.A. Published at the University Press. (Longmans, Green and Co.)

Professor Alexander holds the view that the physical embodiment of artistic experience is essential to that experience, and contrasts this view with the one more generally held, namely, that " the external work of art is a kind of translation into material form of something purely mental."

He differs from Croce by insisting that the artist imagines in terms of his material. The material as treated thus becomes the object, which is therefore no longer valued principally for the things for which it stands, but for its own sake.

Creativeness is limited by the nature of the material, the pre-existence of which gives to the artistic experience the character of discovery rather than invention. Prof. Alexander cites the well-known sonnet of Michael Angelo in which he speaks of the chisel merely laying bare the already existing hidden forms within the marble.

Discussing the relation between natural beauty and the beauty of art, Professor Alexander finds that the difference is " only one of circumstance and proportion." Beauty is *seen into* nature by the interpretive mind, in this case " the emphasis is upon discovery."

I take it that Professor Alexander does not mean to imply, though many assume it as a corollary from this position, that a painting, for instance, is beautiful because the subject it represents is beautiful? True, he has forearmed himself by the statement that " expressive products become the material for art when they are used not for the sake of the things which they mean but in themselves and for their own sake," and, we would add, the same attitude of mind is necessary in regarding natural beauty. It is largely because our appreciation of natural beauty is commonly so confused with personal associations that " representative " art in its turn becomes identified in our minds with its subject-matter.

D. M. L.

The Unity of Life: by H. R. Royston. (Geo. G. Harrap and Co. Pp. 275. 7s. 6d.)

The author considers that the only natural way in which to place the facts of life and reproduction before children is the teaching of nature study. Many will at any rate agree that it is one of the best ways and will appreciate this interesting account of life from simple to complex forms. The material of Chapters VI and VII—"Marriage among Plants" and "Marriage among Animals"—are well worked out. It will, for some, add to the charm of the book that plants and animals are regarded as "wishing," "willing," "planning," "having motives," and so on, but it is probably inaccurate.

The point is emphasized, and rightly so, that the teaching of nature is doomed to failure if it is to consist of nothing but " training the powers of observation." We cannot, however, agree that the boy who knows what colours are found on the wing of a butterfly and how its organs are arranged, will necessarily derive more pleasure from a picture gallery. Nor can we agree that a well-balanced study of nature will make him hear more in a sonata of Beethoven even though he may know nothing of " the appreciation of music."

The book contains many delightful plates and clear diagrams.

F. M. R.

An Outline of English Education (1760-1902): by J. W. Adamson. (Cambridge University Press, 1925. Pp. 74. 3s. net.)

In presenting this reprint of one of the author's contributions to the Cambridge History of English Literature, the Syndics of the Cambridge University Press have chosen wisely; it may serve as a very useful mentor for the student of educational literature, because it gives a connected background upon which the student may project the ideas gained in the study of works mentioned in the comprehensive bibliography; none who read Professor Adamson's writings on the "History of Education" can fail to be impressed by the evidence of care he has taken in verifying his statements, and while we have before us a chapter which is necessarily condensed, the material is presented in a pleasing way and so linked up with the practice and administration of education as to be of great help to those interested in the development of educational thought during the century and a half of which it treats.

A. P. B.

The Day Boy : by Ronald Gurner. (Grant Richards, Ltd., 1924. Pp. 306. 7s. 6d.)

Public school stories exist in thousands, from the ordinary boy's yarn to the type of story represented by Alec. Waugh's " The Loom of Youth," where the main theme is psychological—the development of a youth's intellect and character in the public school environment. In " The Day Boy " a fresh field is worked. State secondary schools have opened the gates of life to thousands, and provided them with an education and a chance of culture otherwise confined to more or less well-to-do classes. It is of the situations arising therefrom that Mr. Gurner writes. " Twenty-two boys came up that September from the fifths to the sixth of Stockham Secondary School. Here was one. One hundred and fifty-seven were made intermediate scholarship holders in the City of London. Here was one. Two thousand seven hundred and fifty-three boys passed on as the result of Board of Education and other grants as scholars to advanced work, through the length and breadth of England. Here was one."

One wonders at first whether Mr. Gurner's pen is as facile as one would like, but this is quite forgotten as one becomes engrossed in the development of plot and character. The author's psychological insight is evident and penetrating, in both the case of the ex-elementary schoolboy and that of the more dashing and wealthy public school youth, and in the *rencontres* between them. The implications of the problems involved in the increased facility for higher education and the clash with the older traditions are worked out in a masterly way, especially in the chapters dealing with Oxford life and afterwards. The book is one which teachers and those interested in the education of the people will find fascinating. It is, perhaps, especially illuminating to those who are outside " the great main stream of national educational politics and policy."

The preface is by Ernest Barker, D.Litt., Principal of King's College, London.

One small slip may be noted : George Hemp (page 30) is on page 20 spoken of as " John Kemp."

E.E.O'N.

Memories and Hopes : by the Rev. the Hon. E. Lyttelton, D.D. (John Murray. Pp. x+340. 16s.)

This is a delightfully written book by a man who evidently enjoyed life and enjoys recalling it. It is freely scattered with anecdotes of prominent contemporaries. Dr. Lyttelton felt keenly the failure, and, indeed, the tragedy, of much of the public school education of his time, especially during his earlier and middle life, yet he had too much zest for life to be depressed by this and too many interests (*vide* especially his cricket and mountain-climbing) for his mind to dwell too continuously upon professional problems.

Naturally, the excessive attention to the classics, and particularly the futility of their study by the duller boys, form a prominent part of his criticisms of public school education. Repeatedly he attacks the methods which gave a doubtful knowledge of the grammar of two languages, " the thought which those languages expressed, and the life which they handed down to posterity being zealously excluded from our purview." It is sad to find that Dr. Lyttelton's experience led him to believe that while " the love of learning for its own sake is nearly universal among children, the dislike of learning is not very far from being universal among adolescents, though a show of zeal is maintained by numerous stimulants." His fellow-masters, apparently, largely relied upon the stimulants of examinations, competitions, and prizes, otherwise, as they believed, they would have got no work done by their pupils. " I should agree with them," writes Dr. Lyttelton, if I had never taught children."

Dr. Lyttelton naturally encountered much opposition and apathy in his attempts at reform ; and, incidentally, it may be noted that he found reform more difficult from the fact that the public schools were so " interlocked and controlled by the Universities."

While naturally no systematic body of educational thought is attempted in such a book as this, there is much of stimulus and suggestion for the teacher and student of education, and for all there is provided not only much pleasant reading but a vivid impression of a noble and engaging personality. C. W. V.

Formation Factors in Character : by Herbert Martin. (Longmans, 1925. Pp. 346.)

The author, who is Professor of Philosophy in Drake University, describes this book as " a psychological study in the moral development of childhood," and he hopes that it " may prove serviceable as a text in the preparation of teachers and in the intelligent enlistment of parents in the moral development of their children." The book covers a large field ; hence the treatment of particular topics, *e.g.*, Inheritance or Suggestion, is necessarily slight. Still, it might well form an introduction for less superficial study, if its readers were not repelled by the disjointed style and the mass of commonplace remarks that it contains. Here is a sample : " Speaking introductorily character and conduct cannot be separated. They may be distinguished but not divorced. Character is conduct in its more substantive aspect. Character and conduct are frequently spoken of as the inner and outer aspects of the self or person. That conduct, in general, is the expression of character is readily recognized. That conduct, in turn, gives fashion to character is equally obvious. They are reciprocally influential "—and so forth. Yet the book gives much sensible advice, *e.g.*, on the folly of making a mystery of sex. " It is socially taboo. We forget that no instinctive tendency is, as such, immoral. We have a zeal for morality, but not according to knowledge. The vast majority of parents deprecate any reference to sex. Ostrich-like, they would eliminate danger by silently closing their eyes or sealing their lips." To these novel habits of the ostrich might be added that of throwing dust in the eyes of its young. Altogether the bird should live in our memories as an awful warning.

After reading this book one is more and more convinced that it is always a mistake to " write down " to one's audience.

History of Elementary Education : by C. Birchenough. (University Tutorial Press. Pp. vi+514. 8s. 6d. net.)

Mr. Birchenough has made several additions to the first edition of his book and has managed to do so without disturbing the clarity of its aim. Among the new matter reference is made to " Bills " and Acts of Parliament affecting education since 1902, and the way in which these have contributed to a National System ; an entirely new chapter treats of the development of the System after 1914 ; much of the excellent chapter on the " New Spirit in Education " has been recast and additions have brought the account of the selection and training of teachers up to date. This edition now shows the manner in which the primary and secondary schools of the country have been brought into relation, and it certainly retains its rank as a first-class account of English Elementary Schools for the last hundred and twenty-five years.

Child Mind : by B. Dumville. 2nd Edition. (W. B. Clive, 1925. Pp. 266. 4s.)

" It has been thought advisable to take the opportunity provided by the printing of a new edition of this book to add a chapter on the ' new ' psychology." In this chapter (occupying 49 pages) the author discusses The Psychology of Individual Differences, Mental Tests, Scholastic Tests, Psycho-Analysis, Individual Methods and Free Discipline. Would not a selected bibliography (which by the way is not given) be preferable ?

Principles of Comparative Sociology : by N. Petrescu, Ph.D. (Published by Watts and Co. Pp. 191. Price 7s. 6d.)

This is an attempt to show that all differences in society are the result of the same psychological substratum working in a surface complex of changing conditions. The author over-emphasizes the importance of the common substratum and appears to hold the view that to see this common substratum beneath the manifold differences would enable us to solve international problems and to readjust society on a more human basis.

More accurate analysis of the mentality of peoples is desirable, and more evidence than a reference to the " Nibelungenlied " and editorials of English and French papers is necessary. On such evidence one cannot hope for a more accurate analysis than " the mentality of the German people is deep, heavy and hazy," " the English reason more slowly and with more facts at their disposal, while the French reason more quickly and abstractly."

Educational Advancement Abroad : With an Introduction by F. J. C. Hearnshaw. (Harrap. Pp. 200. 5s.)
Professor F. J. C. Hearnshaw introduces the volume with an essay which briefly surveys the common features standing out in the other eleven contributions. These have appeared in the pages of the *Journal of Education* within the last year or so, and are by people who have, in most cases, a close first-hand acquaintance with the countries and their educational systems of which they write. The matter is clearly set forth, and those who are interested in the way in which different countries are seeking to meet their problems, many of which have been emphasized though not caused by the Great War, will find answers to their questions in this handy little book.

Report on the Present Position of Vocational Guidance and Vocational Selection : by M. Boole Stott, B.A., with an introductory note by Beatrice Edgell, M.A., Ph.D., D.Litt. (The Women's Employment Publishing Co., 54, Russell Square, W.C.1. Pp. 95.)
This booklet affords a most useful survey of experimental investigations bearing upon the problems of vocational selection. The main section deals with Experiments on General Intelligence and Traits of Character and Personality in Relation to Vocational Guidance and the Vocational Aptitudes of College Students. A chapter follows on experiments bearing on selection for specific occupations and one on Institutes in various countries, for vocational guidance. The book is an excellent guide to further study.

Educational Heresies : by Bernard D. Wright. (London : Noel Douglas. Pp. 136. 5s.)
This is an interesting little book, for the writer has roamed far and wide, and managed to unburden himself of many loads. Here he inveighs against Shaw, and there he breaks a lance with Wells. Politics are not taboo ; he magnifies the work of Sanderson of Oundle ; the " Gary Scheme " receives his blessing ; he shows an appreciation of some of the English educational experiments of recent years ; Dalcroze arouses his enthusiasm.

The book is lightly written, with an occasional touch of bitterness.

The Child and His Problems : by Alice M. Hutchison ; with a Foreword by H. Crichton Miller. (London : Williams and Norgate. Pp. 168. 5s. net.)
Dr. Crichton Miller in his foreword says : " Dr. Hutchison has admirably succeeded in setting forth for parents and teachers the practical side of early education." The book contains ten short but helpful chapters, among the subjects dealt with being " What do we mean by Discipline ? " " Is there any value in Punishment ? " " The ' Difficult ' Child." " The Nervous Child." Dr. Hutchison, in simple, telling language, succeeds in giving her readers the results of a wide experience at the Tavistock Clinic. The book should be widely read.

Consider the Child : by M. Eaton. (Longmans. Pp. vii+256. 4s. 6d.)
As the writer states in the preface, this book is intended for and addressed directly to students in training.

Any student who works through the practical problems given, as one would work through a set of exercises in a mathematical subject, will find it necessary to put to use knowledge gained in lectures and reading.

In the arrangement and choice of matter the author shows an initiative and an originality which give to the book the charm of novelty.

Although intended for students, school teachers and those concerned with the training of teachers will undoubtedly gain much from a careful perusal of this book and from an attempt to solve the problems stated.

The Dawn of Character in the Child : by E. E. R. Mumford. (Longmans. Pp. xv+242. 5s.)
This is a new and revised edition of a book first published fifteen years ago, and of which 16,000 copies have been sold. In the new edition the chapter on " Punishment " has been completely re-written, and now forms an indictment of all forms of arbitrary punishment in the early training of the child.

Starting Points in Social Science : by A. G. Keller. (Ginn and Co. Pp. 183. 6s. 6d.)

It is hard to imagine a more delightful introduction to a study of the social sciences than this little book provides. The introductory part dealing with " Types of Environment " and " The Races of Mankind," are adequate. Mankind is classified on a basis of " culture " or " civilization," and in succeeding chapters attention is given to the culture rather than to the races. It is a collection of essays which were originally prepared and used for intramural purposes in Yale University.

Altogether, it is a most readable volume.

Modern English : J. Hubert Jagger, M.A., D.Litt. (Published by the University of London Press. Pp. 236. 5s. net.)

A fascinating book !

The chief chapters, after a brief historical outline, are : Spoken and Written English, in which the author combats the view that writing is more real and potent than speech and gives an analysis of the sounds used in speech ; The Meaning of Words, in which the main linguistic principles are explained and illustrated ; The Modification and Formation of Words ; The Sources of the Vocabulary, Latin and English Grammars ; Grammatical Structure ; Characteristics and Usages, and Reflections.

Those who love the English language will certainly find in this charming book additional matter to increase their affection for their mother tongue, and those who have not yet developed a sentiment for their native language are recommended to read it. It reveals the English language as vital and growing, not as dead and unchanging. Though written principally for the use of teachers and students in training colleges, for which it is admirably fitted, the book appeals to a wider public, as is proved by the interests in its contents shown by some of the reviewer's non-academic friends.

A. E. C.

The History of Mathematics : Vol. II : by David Eugene Smith. (Edited by Ginn and Co. Pp. xii+725. 21s.)

Professor Smith, in the preface to the second volume of his " History of Mathematics," claims that the teacher will see in it " a kind of moving picture of the growth of his subject."

The book justifies its writer's claim. The volume covers a wide range of topics all of interest to the teacher of elementary mathematics. Not only have such subjects as arithmetic, geometry, algebra, trigonometry, and calculus a share of attention (perhaps the calculus has not received its full share), but the book includes an enlightening chapter on " Mechanical aids to calculations," and a chapter on " Problems and mathematical recreations," enjoyed in all countries and at all epochs.

Considering the fact that the mass of material is packed into a compass of but 705 pages, which are thickly strewn with excellent illustrations from original sources, it is not surprising to find compression practised to the point of obscurity. I quote an example : Without a word of explanation we are told of the ingenious method by which Russian peasants multiply numbers such as 49 and 28. They " proceed to double 28 and halve 49, thus :

$$\begin{array}{cccccc} 49, & 24, & 12, & 6, & 3, & 1; \\ 28, & 56, & 112, & 224, & 448, & 896. \end{array}$$

The fractions are neglected each time, and finally the figures in the lower row, which stand under odd numbers, are added thus :

$$28+448+896=1372\ ;$$

and this is the product of 28×49." It may prove a stimulating exercise for the teacher and pupil to find the reason !

In spite of obscurities the book is full of interest, and every serious teacher of mathematics should possess it. Professor Smith claims that a teacher, in seeing how the race has developed the subject he is teaching, may have methods of presentation suggested to him which appeal to his pupils' minds, and which present mathematics as a developing and growing structure of knowledge rather than a dead and static mass of facts ; apart from this, the book undoubtedly supplies the teacher with a wealth of anecdotes, illustrations, and suggestive problems.

In these days when the recognition of the fundamental nature of the conception of ratio is occupying some attention it will be interesting to notice that ratio in one form or another has occupied the human mind from an early date.

In the sixteenth century multiplication and division were defined in terms of ratio, and in the same century the " rule of three " was taught by ratio not by our popular but poorer method of unity. Teachers of this subject may take a hint from our forefathers. On the other hand, teachers who look to the history of mathematics for guidance in teaching mathematics will be disappointed to find that the idea of negative number long preceded the idea of directed number, and square root was approached through algebra rather than through the diagram. To balance this trigonometry was approached though shadow measurement, the first application of algebra was in the nature of number puzzles, and intuitive geometry preceded demonstrative.

Enough has been said, I hope, to suggest to the teacher that the book is worth studying from the standpoint of school teaching. It is worth more than this, for it gives students of history both guidance to continue his reading and points the way to paths of research.

M.H.

An Economic Geography of Europe : D. H. Smith, B.Sc., F.R.G.S. (Longmans, Green and Co. 4s. 6d.).

This book is intended for those " studying for the advanced examinations of the Royal Society of Arts, the Intermediate Examinations of the London University, and similar examinations." An attempt is made to give a geological basis and in the hands of teachers with geological tastes the book might well achieve this. The order of treatment is a combination of the regional and the political area. Some parts, such as the British Isles and France, are ably treated in much detail as examples to the teacher and the student of what may be done, if desired, with other parts. Statistics are freely used, but they would have been much more useful for comparative purposes if one system of units had been employed throughout. Stress is laid upon the possibilities of water power, the part played by the skill and energy and the " momentum of established industries."

The book is marred in parts by (1) some rather loose writing, *e.g.*, " On the rich soils . . . fruit is grown : oranges, figs . . . maize wheat, hemp," " Norwegian-Sweden " ; (2) inaccuracy, *e.g.*, " Greece includes . . . the immediate hinterland of Smyrna," " Basle on the Rhone " ; (3) careless proofing, *e.g.*, " 1 hectare=2,471 acres." In places, a needless amount of detail is given, *e.g.*, " Very fine salt . . . is found at Slanic, Teiesa, Doftana, Poiana, Ocnele Maici, Audreiasi, Targu Ocna."

The importance of having a good atlas and of referring to up-to-date commercial publications is rightly stressed, and a suggestive bibliography is given at the end of the book.

T.P.H.

Elementary Algebra : Part I. : by F. Bowman. (Longmans, Green and Co., 1925. Pp. 626. 6s.)

This volume carries the student as far as the Binomial Theorem, and follows the general lines of the formal algebraic text-book. Of the few innovations some would appear not to be desirable and others are not particularly well expounded in the book, *e.g.*, the postponement of graphical work until quite late in the book (p. 360) and the early introduction of imaginary quantities.

Mechanics and Applied Mathematics : Part I., Mechanics : by W. D. Hills. (University of London Press, 1925. Pp. 250. 4s.)

This book is an attempt " to link up the many excellent books that have been written for the technical student, and in which the machine predominates, with the equally excellent works on 'pure mechanics' in which the practical aspect is not considered." It is of London Matriculation standard, and covers the syllabus formally and deductively.

Modern Business Geography : E. Huntington and S. W. Cushing. (George G. Harrap and Co. 8s. 6d.)

This is a typically American production alike in its good points and in its defects. It is interestingly written, the pictures and maps are excellent, the names of the authors are sufficient guarantee of the quality and accuracy of the material, the problems and exercises are exceedingly good, the type is beautifully clear, there is an excellent index, ideas are fresh and original, the examples cited are mainly taken from the United States, so that the book is suitable for home use. It is admitted also that children for whom the book is intended, those of the junior high school, are interested in economic facts. But the volume, like most American books on geography, is scrappy. This of course would not matter if it were intended as a reference book, but, as we have already noted, it is a school book and takes its present form with deliberate intent. " Regional study," says the preface, " is likely to be irksome," so regional methods are dropped. It is recognized moreover that pupils lose interest if they are taught economic geography on the plan of treating one commodity after another in the self-same way, and an attempt is made to introduce variety by arranging the matter under the four headings, Primary Production, Transportation, Manufacturing, and Consumption. The trouble, however, is that one never seems to get any " forrader." A case might be made out for teaching scrappy facts to younger children, but certainly at the age of children for whom this book is intended it is necessary to have a continuous thread of a story if not a systematic scheme. This book has neither and comes to no conclusion ; it merely peters out.

J.F.

Elizabethan Lyrics : Chosen, Edited and Arranged by Norman Ault. (Longmans, Green and Co., 1925. 10s. 6d.)

Mr. Ault's collection is of value alike to the lover of English poetry and the student of Elizabethan literature. Though many of the poems are available to the reader in other anthologies, Mr. Ault has not been contented with the findings or gleanings of former editors. He has gone direct to the MSS. and earliest printed editions, and has recorded many interesting readings and variants of familiar lines. The poems are arranged as far as possible in order of their publication, and the student is thus enabled to trace for himself the development of the English lyric from the days of Wyatt and Surrey to those of Wither and Ben Jonson.

E.M.J.

English of To-day : by W. T. Webb. (Routledge, 1925. Pp. 198.)

This little book should be in the hands of all journalists, compositors, and Babus ; it was presumably not intended for use in English schools. It is a curious mixture of pedantry and useful advice. Thus the author devotes his first chapter (21 pages) to the Genitive Singular and the Plural of Nouns ending in " s." Coleridge is arraigned for writing " Descartes' " instead of " Descartes's," while Matthew Arnold gets credit for " Theocritus's idylls." Such points (even if the usage is established) are surely of very slight importance. We find of course sections on the Split Infinitive, on the use of Shall and Will, and other matters dear to the heart of the purist. Occasionally logical accuracy, however, does not suit language. Thus such a construction as " He is a man whom I know is trustworthy " (common enough in Shakespeare), though censured by Professor Webb, has been proved " correct " by Jespersen.

On the other hand there are useful chapters on Words followed by Prepositions, on Idiom, on Verbs commonly confused, on Foreign Words, Quotations, etc. These should certainly be of use to a foreigner, warning him against what is unnatural or ill-bred in the English language. But it is surprising to find in a book the whole aim of which is accuracy an allusion to " Horace's familiar phrase ' laudator temporis acti,' ' praiser of time past,' " since without their continuation " se puero " the Latin words mean nothing.

Short Guide to the Reading of English Literature : G. Boas. (Published by G. G. Harrap and Co., Ltd. Pp. 32. 1s.)

A list of selected English Classics, with names and prices of critical books and essays on them, arranged for those who are reading English literature by themselves.

Science and Religion : by J. A. Thomson. (London : Methuen and Co. Pp. ix+238. 7s. 6d. net.)

This volume contains six lectures delivered by Prof. Thomson in Union Theological Seminary, New York. The subjects of the lectures are " Science and Religion," " The Unseen Universe and the Nature of Things," " The Powers of the World," " The Implications of Life," " Psychology and Religion," " A Contribution to Natural Religion." Three short appendices by D. L. Thomson on " Relativity," " The Quantum Theory," and " States of Matter " are added.

The book concludes with these words : " The chief aim of this book is to show that scientific description in terms of lowest common denominators cannot be in any radical antithesis with transcendental interpretation in terms of the greatest common measure." Opinions will differ as to whether the writer has achieved his aim, but all will agree that he has given us a thoughtful and in some ways a stimulating book.

A Treatise on Light : by R. A. Houstoun, M.A., Ph.D., D.Sc., Lecturer on Physical Optics in the University of Glasgow. New Edition (Fourth). (Longmans, Green and Co., 1925. Price 12s. 6d. net.)

This book gives a sound, well-arranged treatment of its subject, and can be recommended as an introduction to the advanced study of light and radiation.

The use of higher mathematics has been restricted so that the greater part of the book can be appreciated by students with a sound equipment of elementary mathematics.

It is well illustrated by diagrams, and includes examples at the end of each chapter ; answers to these examples might have been provided with advantage.

Recent advances in the science are dealt with somewhat cursorily in the last chapter.

Vocabulary Building : by W. Taylor. (Published by G. G. Harrap and Co., Ltd. Pp. 96.)

A graduated course of exercises in the use of words, with spelling, for primary schools and junior forms in secondary schools. The book contains useful exercises, but the psychological principle underlying others is unsound—*e.g.*, the author assumes that the best way of dealing with words that sound alike but are spelled differently is simultaneous presentation on the blackboard with illustrations.

Rapid Calculations : by A. H. Russell, B.A. (Gregg Publishing Co., Ltd. Pp. 224.)

Teachers of arithmetic will find the contents of this compilation of shortened methods and means of checking answers of great use to themselves and their pupils. The wide range it covers includes G.C.M., L.C.M., Fractions, Square and Cube Roots, Interest, Mensuration, and other miscellaneous matter ; a Universal Calendar and rules for finding the date of Easter constitute the last chapter of an interesting and helpful little book.

Intermediate Light : by R. A. Houstoun. (London, Longmans, Green and Co. Pp. 227. 6s.)

Many readers of Dr. Houstoun's " Treatise on Light " and particularly teachers who have used the larger book, will be interested in this volume, written to meet the requirements of the Intermediate Examinations of the Universities. The book should enable the student to develop an interest in the subject apart from the immediate needs of examinations, for the treatment, although in many ways quite formal, is occasionally suggestive. The author has attempted to indicate the trend and the difficulties of modern developments in physics.

The Master and His Friends : by H. A. Wilson, M.A. (Longmans. Pp. 244. 5s. net.)

This is a story by the Rector and Rural Dean of Cheltenham, woven round the life of Jesus and of two supposed children, in a way that will appeal to the imagination and interest of children.

Exercises in Arithmetic and Mensuration : by P. Abbott. (London, Longmans, Green and Co.)

The re-issue in four parts of P. Abbott's well-known book of Exercises in Arithmetic and Mensuration will be welcomed by many teachers. The books are bound in stout paper and the prices vary from 1s. 4d. to 2s., each part being obtainable with or without answers. This re-issue should enable the books to be more widely used in schools, but one awaits the time when they will be available at about the same price but strongly bound in limp cloth so as to withstand the hard use which must be the lot of school books.

Concerning the Habits of Insects : by F. Balfour Browne, M.A., F.R.S.E., F.Z.S. (Cambridge University Press. Pp. 169. 6s. net.)

This book is " the outcome of a course of lectures adapted to a juvenile auditory, delivered at the Royal Institution during the Christmas holidays, 1924." Its main purpose is to explain methods of study and exploration by which the life histories of the various insects selected are obtained. It is, indeed, a serious guide to this particular branch of Nature study, and will be very useful to students of zoology, juvenile and others.

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The Reliability of Essay Marks.

By GODFREY H. THOMSON and STELLA BAILES.

The object of this small investigation was to obtain data on the reliability of essay marks. First, the following genuine essay was obtained and duplicated:

> "St. Francis.
>
> "St. Francis was a very rich popular youth, his father was a silk merchant, He whent to a lot of parties and dances and had a very gay life. But one day He had a dream and he thought he had to go and Be a knight and he whent and when he got so far there God told him not to go. And he came back, and turned terrible ill and was nearly dead but he got better and came to help the poor lepords and the sick people and graduly more and more people joined him, and they got permission from the pope to be called Friars."
>
> (Age 12 years.)

This essay was marked by a group of fourth year students, and by members of a Saturday class, most of whom were heads of elementary schools. The results—which speak for themselves—were as follows:

61 *Fourth Year Students.*

Marks	0-	10-	20-	30-	40-	50-	60-	70-
Cases	1	2	6	9	17	10	12	4

Saturday Class (57 *Members*).

Marks	0-	10-	20-	30-	40-	50-	60-	70-	80-
Cases	1	4	10	15	15	6	3	2	1

The essays referred to in the following were written by 50 boys in Standard VII in a school in Newcastle-upon-Tyne as part of their regular monthly examination; and at the time neither the boys nor their teachers had any idea that the essays or the marks awarded to them were to be made the subject of any experiment. The members of the class wrote, alternately as they sat in class, either upon "Ships" or upon "Gulliver's Adventure," the latter subject having reference to a portion of their reading book, an extract from Swift. The class was ordinary Standard VII, (after all the scholarship children for secondary schools had left in Standard VI), and to that extent was a little more homogeneous than a single Standard VII in a smaller school would be; but not as homogeneous, probably, as a set of candidates for a scholarship examination, for it contained some very poor pupils.

The teacher marked the essays in the ordinary way, giving 5, 4, 3 2 or 1 mark for composition only, separate marks being given for handwriting and for spelling. He gave 14 fives, 15 fours, 14 threes, 6 twos, and 1 one. It was after this that we obtained the essays and, cutting off the class teacher's marks, which were all at the foot, gave the essays to six head teachers (men) of elementary schools consecutively, asking each to award approximately an equal number of fives, fours, threes, twos and ones. They were kept in ignorance of the marks which others had awarded. The following are the most striking of the fifty results :—

TEACHERS A, B, C, D, E, F, MARKING ESSAYS.

Name of child.	Class Teacher.	A.	B.	C.	D.	E.	F.	Total.	Remarks.
H.P.	5	5	5	5	5	5	5	35	All agree.
G.H.	4	1	5	4	5	4	5	28	Marks 1 and 5 both given.
G.S.	5	3	3	1	2	3	3	20	Marks 1 and 5 both given.
R.P.	4	5	3	5	5	2	3	27	Four of the five marks
W.W.	4	2	5	4	3	4	5	27	,, ,,
E.C.	3	5	4	4	2	3	5	26	,, ,,
J.C.	5	4	3	2	3	3	4	24	,, ,,
R.C.	5	4	2	3	4	2	4	24	,, ,,
A.E.L.K.	5	2	4	3	5	3	2	24	,, ,,
G.Ar.	3	3	3	2	5	3	4	23	,, ,,
A.A.	4	3	4	1	3	3	2	20	,, ,,
R.O.F.	3	1	4	4	3	3	2	20	,, ,,
E.R.	4	2	1	4	3	5	2	21	Each possible mark.

The essay of the boy E. R., who obtained each possible mark, from the lowest to the highest, from one or other of the judges, ran as follows :

"SHIPS.

"The first ship that was made in England was very small. It was a sailing boat made of wood. Of course there were canoes before this but they were very small and unable to stand against a storm. A voyage on the first sailing boat was very thrilling but also dangerous.

"As time passed by these boats became large and more capable of standing a storm. But, after a time the people (the p) grew tired of these boats and turned all their attention to the new boat. This was a (slean) steam boat though it looked like a hugh two-wheeled monster to them. It had two wheels, one at each side, which propelled round and moved the boat on.

"These old boats soon passed away, and a new type appeared. This, instead of two wheels, had a propellor, at the back, and in appearance was very graceful. This is the type of boat that is used to-day.

"The ocean liner, and other steamers, are mostly of this type except
called
a few of the old type which still exsist. The ocean liner is ofter / a 'floating palace,' because of its immense size. The equipment of this ship would take too long to describe so I will just mention that it has rooms for many people. Some sailing boats still exist but these are gradually dieing out. Canoes are still used by the natives of tropical countries to sail down rivers or for carry good down a river."

The intercorrelations (product-moment) were approximately as follows:

	Class Teacher.	A.	B.	C.	D.	E.	F.
Class Teacher.	—	.60	.69	.56	.69	.63	.67
A.	.60	—	.53	.50	.54	.55	.68
B.	.69	.53	—	.60	.65	.66	.64
C.	.56	.50	.60	—	.67	.67	.65
D.	.69	.54	.65	.67	—	.54	.69
E.	.63	.55	.66	.67	.54	—	.69
F.	.67	.68	.64	.65	.69	.69	—

The correlations of each judge with the pool of the *other* judges (excluding his own mark) were approximately:

Class teacher with rest	0.77
A with rest	0.67
B ,, ,,	0.76
C ,, ,,	0.73
D ,, ,,	0.76
E ,, ,,	0.75
F ,, ,,	0.82

An attempt was made to understand the variable rating of E.R.'s composition, and a letter was sent to the six markers asking them to explain as far as they could how they had arrived at their decisions. This is a brief summary of the answers received:

A (mark 2) noted first that Newcastle boys have a port, have had oral lessons on ships, and have read something about the subject. He considered that E.R. set out to give what he (*A*) looked for, *i.e.*, information and an accurate account of the evolution of ships. In a detailed criticism which followed he gave instances of (*a*) want of clearness in ordering and expressing ideas; (*b*) want of accuracy of statements.

B (mark 1) considered the essay amongst the best of the lowest group, but a poor one for a Standard VII boy; in its limited treatment of the subject and the simplicity of its language it was more what one would expect from a boy in Standard II or III.

C (mark 4). The mark here was given by comparison with others of the batch. On re-reading *C* analysed the composition in this way: Good points—sequence, short sentences and general accuracy in grammar; weak points—the attempts at arrangement of paragraphs and, in places, the style.

D (mark 3). *D* explained in the first place that on reading the essays a rough classification based on general impression was made thus:

(*a*) 7—8 very best.
(*b*) 32—33 medium.
(*c*) 7—8 poorest.

Set (*b*) was re-read, and in a similar way sub-divided. Lastly an arrangement in order of merit within the groups was made, and a comparison followed by some re-assessment, of the best of one group with the poorest of the group above. E.R.'s work was analysed in some detail :

(1) Definite evidence of arrangement of ideas shown.

(2) Power of expression not sufficiently developed to handle easily the facts.

(3) A laboured essay—but the best effort of an average child (perhaps below the average).

D acknowledges that these influencing factors were not definitely formulated at the time of marking.

E (mark 5). The analysis in this case was :

(*a*) Good matter—arranged progressively and evolved from an outline.
(*b*) Each paragraph developed a fresh idea.
(*c*) Sentences were correct in grammar and not too long.
(*d*) Freedom from spelling errors.
(*e*) Written naturally.

The comparison with *D's* remarks is fairly close.

F (mark 3). As in the case of *D*, the essays had been carefully classified; not in this case, however, on "general impression," but on analysis and an attempt to assess the different factors studied. This is the result in the case of E.R.'s work :

(*a*) *Facts*—some incorrect. *Score* about half marks.
(*b*) *Ideas*—good. *Score* more than half, say four out of five.
(*c*) *Sequence of ideas*—some incorrect placing. *Score* less than half.
(*d*) *Grammar*—defective in places. *Punctuation*—good. *Spelling*—defective. *Score* about one-half.
(*e*) *Choice of language*. *Score*, on the whole, more than one-half.

Summary—3 out of 5.

It may be of interest to compare the results of this investigation with those obtained from a group of five women students, who may be regarded as untrained in the task of marking compositions.

The exercise in this case was worked by a class of Standard V girls, 48 in number. A list of ten words was given :

hungry, sea-green, electric, loving, street-car, softly, weary, streets, hurry, woman.*

The girls were asked to make up a story introducing all the words, to think it out before writing, and to make it as interesting as possible.

---

*" Interests, Abilities and Achievements of Gifted Children." (Coy. Columbia University Teachers College Series.)

The five students (*S*, *T*, *U*, *V*, *W*) judged the compositions quite independently of each other, arranging them in five classes of approximately equal numbers; the 9-10 best, the 9-10 weakest, and so on. The only instruction given was that again spelling was not to be taken into consideration in forming a decision on the value of the compositions.

As before, five marks were given to the best papers, four marks to the next best, and so on, the following being some of the 48 results obtained:

STUDENTS S, T, U, V, W, MARKING PAPERS.

Name.	S.	T.	U.	V.	W.	Total.	Remarks.
J.O.	3	4	5	3	2	17	Four of the five marks given.
H.S.	2	3	4	5	2	16	,, ,,
N.H.	2	1	2	4	5	14	Four of the five marks, including 1 and 5, given.
J.R.	4	2	3	2	1	12	Four of the five marks given.
M.W.	2	3	2	1	4	12	Four of the five marks given.
M.D.	1	2	4	3	1	11	Four of the five marks given.
M.R.	5	4	1	1	4	15	Marks 1 and 5 both given.
N.C.	5	2	2	3	1	13	Marks 1 and 5 both given.
O.C.	1	1	1	1	1	5	All agree.
L.W.	1	1	1	1	1	5	All agree.

The results again make it abundantly clear that the best and the poorest compositions are easily discovered; and that considerable variation of opinion ranges round the medium ones. There is, too, an unexpectedly close relation between the range of judgment in the two investigations:

Agreement.	Teachers' Marking.	Students' Marking.
Perfect	1	2
Essays placed in 2 classes........	11	11
Essays placed in 3 classes........	23	20
Essays placed in 4 classes........	12	12
Essays placed in 5 classes........	3	3

This, apparently, does not agree with the findings of Dr. Hudelson who, after investigating the very varying judgments formed by conscientious, experienced English instructors," goes on to report that: "Conditions among inexperienced teachers are even more chaotic."*

The approximate inter-correlations, however, obtained as before show considerably less agreement:

	S.	T.	U.	V.	W.
S.	—	0.47	0.52	0.34	0.36
T.	0.47	—	0.59	0.51	0.67
U.	0.52	0.59	—	0.55	0.45
V.	0.34	0.51	0.55	—	0.48
W.	0.36	0.67	0.45	0.48	—

The correlations of each student with the pool of the others (excluding her own mark) were approximately:

S with rest	0.52
T ,,	0.73
U ,,	0.68
V ,,	0.59
W ,,	0.62

In order to pursue further this problem of reliability in essay marks, the first group of six judges (*i.e.*, the six head teachers of elementary schools) were asked to mark, on the same principle as before, another set of compositions written by the same boys and all except *E* did so. In this case, in choice of subject and in conduct of the test, the lead of Dr. Cyril Burt was followed.† The subject "School" is approved by Burt for the following reasons:

> "The title . . . announced a subject interesting and well known to school children; and, moreover, affords something familiar and concrete to the dull, and at the same time offers itself to a broader treatment and more abstract treatment in the hands of the oldest and ablest."

The subject was not announced until the boys (43 in number in this case) were ready to begin writing. At the suggestion of the class teacher, 50 minutes instead of 30 were allowed; and five minutes before the end the boys were warned of the time. Burt's procedure, therefore, was followed save in the time allowed.

---

*Twenty-second Year Book of the National Society for the Study of Education.
†Mental and Scholastic Tests. P. S. King and Son, p. 330.

The results were much the same as before. These are the most striking of the 43 cases :

TEACHERS MARKING ESSAYS.

Name.	A.	B.	C.	D.	F.	Class Teacher.	Remarks.
P.R.N.	4	4	3	3	2	5	Four of the five marks.
J.W.	3	3	2	1	4	2	Four of the five marks.
R.P.	2	4	3	3	5	3	Four of the five marks.
R.G.	1	3	5	2	3	1	Marks 1 and 5 both given.
L.E.	5	5	5	5	5	5	All agree.
J.R.	1	1	1	1	1	1	All agree.

CORRELATIONS.

	A.	B.	C.	D.	F.	C.T.
A.	—	0.69	0.53	0.62	0.53	0.73
B.	0.69	—	0.66	0.68	0.85	0.75
C.	0.53	0.66	—	0.56	0.58	0.42
D.	0.62	0.68	0.56	—	0.58	0.70
F.	0.53	0.85	0.58	0.58	—	0.60
C.T.	0.73	0.75	0.42	0.70	0.60	—

Correlation of A with pool of rest .... =0.74
,, ,, B ,, ,, ... =0.89
,, ,, C ,, ,, ... =0.64
,, ,, D ,, ,, ... =0.75
,, ,, F ,, ,, ... =0.75
,, ,, C.T. ,, ,, ... =0.76

These correlations are, on the whole, high, and point to a considerable measure of agreement—in excess of what is commonly held to be true. And in spite of the individual inconsistencies, one can, we think, draw the same conclusion throughout, that the correlations obtained by judges of essays are fairly satisfactory, *considering the great difficulty of the task.* But considered as reliability marks for two markings of the same work, the correlations are very low. They must not, of course, be compared with the correlations obtained by two applications of an intelligence test, but with two markings of the same answers to an intelligence test. Correlations of the latter kind are very high, practically unity ; and the present correlations by their *comparative* lowness emphasize the fluctuating and subjective nature of a judgment on an essay.

An Investigation into the Development of the Moral Conceptions of Children.

BY EVE MACAULAY AND STANLEY H. WATKINS.

PART II.

OUTLINE OF INVESTIGATION.

To find out what a person holds to be wrong does not mean that you have discovered what he thinks is right. It does not follow that—because a man thinks theft a crime—he considers almsgiving a virtue, or that since he would not commit a murder, he would be willing to sacrifice his own life to save another, or even to prevent someone else from being murdered. For this reason it was considered necessary to set a second question to the children who gave lists of what they believed to be moral offences, in order to elicit their positive attitude towards morality.

It was decided that on two accounts a different form of question must be used for this end. The first reason was that an experiment with the question, " Make a list of the most good and noble things that any one could do," obtained no tangible results, even when given within five minutes of the completion of the list of crimes. " Be good," and " Be kind " seemed to be the limit of what the little children could write, whilst the elder ones gave only very short and inconclusive lists of the more obvious virtues. Virtue is more abstract and diffused and much more difficult to crystallize. The children seemed, with this bold question before them, to be in the position of G. K. Chesterton's journalists. " We announce on flaring posters that a man has fallen off a scaffolding. We do not announce on flaring posters that a man has not fallen off a scaffolding, yet the latter fact is fundamentally more exciting ; but you cannot reasonably be expected to comment upon the permanent miracles. Busy editors cannot be expected to put upon their posters : ' Mr. Wilkinson still safe ' or ' Mr. Jones, of Worthing, not dead yet.' They cannot tell of all the forks that have not been stolen, or of all the people who have not run away with other men's wives." So the children seemed to be unable to set down the good deeds they admired.

The second reason, for which a different form of question was chosen, was that it was desired to enquire further into certain tendencies, which, judging from the first part of the enquiry, appeared to exist amongst the children. To fulfil these needs printed sheets were prepared, on which were two questions :

(1) What person whom you have ever known, or of whom you have ever heard or read, would you most wish to resemble ?*

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* Barnes Pedagogical Seminary, 1900. Friedrich " Die Ideale der Kinder," Zeits f. pad. Psychologie u. Pathologie, Vol. III, p. 38. Willard, " Children's Emotions." Kline, " Study in Juvenile Ethics," Pedagogical Seminary, Vol. X, p. 239. F. W. Osborn, " Ethical Contents of Children's Minds," Educational Review, 1894, Vol. VIII, p. 143.

(2) Give a list of the reasons which make you choose this person. The usual directions as to not giving the name but only the age and class were also printed on the sheets. The work was undertaken amongst the same children and students who had done the former experiment.

General Survey of Results.

The characters were classified not according to the calling or professions to which they belonged, but according to the reason which the children gave for their choice of the character or according to some particular tendency which the choice of ideal illustrated. The main desires were found to be for power and wealth, for adventure, and "to do good."

Grouping the characters according to reasons for choice, the percentages run :

Power and Wealth	50.5%
Adventure	30.5%
To Do Good	15.0%
Miscellaneous*	4.0%
	100.0%

Acquaintance Ideals.

These are, with younger children, either child friends or a relation ; after ten years old they are usually adults following some profession which the child admires. After 14 there is a tendency to choose again a relation of the same sex as the writer ; after 18 the acquaintance is generally a social worker of some kind. Three-quarters of this choice illustrate the desire for power and wealth.

Characters Taken from Fiction.

The most popular are *Robinson Crusoe, The Scarlet Pimpernel, John Ridd, Rosalind* ("As You Like It"), and *Beth March* ("Little Women"). There are, of course, a number of single characters also. Two-thirds of these come under the adventure heading, the remainder under "To do good."

Kings and Queens.

These are drawn from all periods of history, though members of the reigning Royal Family are most frequently selected.

Historical and Adventurous Characters.

The most popular are Drake, Nelson, Robin Hood, Joan of Arc, Raleigh, Columbus, Cromwell, Napoleon, Arthur, Clive, Florence Nightingale, Grace Darling, Livingstone, Cook, Captain Scott, and Shackleton. Dick Pym (a local football hero) headed the elementary list of popular sportsmen, and in all the schools together, Jack Hobbs, Steve Donoghue, and Mlle. Lenglen are the most frequently chosen. Out of famous men and women of the past century and up to the present day, the most frequently chosen are Gladstone, Marconi, Pasteur, Stanley Baldwin, Ramsay MacDonald, Lloyd George, Lord Shaftesbury, Jack Cornwall, Sir Douglas Haig, Beatty, Kitchener, and Buller (a local hero). Three-quarters of this choice illustrate the desire for power and wealth, the remainder the desire "To do good."

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* The miscellaneous characters are left, as the reasons were impossible to classify.

The Deity.

This is almost invariably Christ, whilst the other religious characters frequently given are the Virgin Mary, St. Paul, St. John, and St. Francis of Assisi.

Cinema Characters.

The favourites at the time of the investigation were, amongst the boys, Tom Mix, Rudolph Valentino, and Jackie Coogan; amongst the girls, Mary Pickford and Pearl White.*

There was also a small miscellaneous heading of callings chosen without a character being named, and of animals, fruit, and flowers.

The percentage of children choosing the different types of characters ran thus—the total number of papers being 2.356:

Acquaintances	28.5%
Fiction	22 %
Soldiers, etc.	21 %
Deity	9.5%
Monarchs	9 %
Sportsmen	6 %
Miscellaneous	4 %
	100 %

There is also a marked difference between the slum girls' and the secondary girls' papers in regard to the desire for beautiful clothes, bright colours, and good houses. To the child up to nine years the wish is for "a big nursery," after that for "a room to myself." In Schools *A*, up to the age of 12, 72% of the girls express a wish for one or other of these; in Schools *D* and *E* only 11%. There is another difference—often the slum child chooses the Queen, Florence Nightingale, the Mayoress, and such characters "because she is a lady"; on the other hand, the secondary school child chooses an acquaintance ideal "because she is lady-like."

GENERAL ANALYSIS OF RESULTS.

The general trend of the results of the inquiry into children's "ideals" confirms the evidence of the inquiry into "crimes," that the morality of the group depends on the character of the group, and that there are clearly marked age differences in moral development. It also shows clearly that the supreme desire of children up to the age of 13 or 14 is for power. The social differences are shown in the gradual widening in the range of choice of ideals, in the fact that moral judgments are passed at an earlier age amongst the better class children, and that the acquaintance ideal (as indicative of an undeveloped mind only) is highest in Schools *A*, and gradually dies out as the economic scale is ascended. The choice of the "acquaintance ideal," of "monarchs," and of "historical ideals" illustrates the age differences, and the "power" desire particularly well; so to a great extent does the choice of the Deity.

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* One boy of 14 was asked, after he had handed in a paper with Rudolph Valentino as his ideal, whether he would not rather be Charlie Chaplin. He replied: "Pooh, no one bothers about him now."

The percentages for age which are quoted in the following papers are based on over 200 papers for each of the ages of 8, 9, 10, 11, 12, 13 and 14; over 100 for each of the ages of 18 and 19; not less than 50 for each of the ages 7, 15, 16, 17; and over 30 for each of the ages 20, 21, and 22-26.*

The "acquaintance ideal" figures, for both sexes and from all the children and adults who took part in the enquiry, run as follows:—

Age........	7	8	9	10	11	12	13	14	15	16	17	18	19	20–1	22–6
% Age	65	59	49	32	17	12	8	11	11	19	21	38	31	28	10

The type of acquaintance chosen, and the reasons given for the choice vary with every successive stage of development, and in a manner which is very significant. Thus at 7, 8 and 9 years old the acquaintance is either a child friend chosen for specific possessions, such as "a top," "balls," "two dolls," "a penny a week for sweets"—a parent, generally "mother," because she gives things, or occasionally an adult friend for the same reason. The inference seems to be that, with the little ones, power lies in possession, and he desires to make himself as strong as his ideal either by personal possession of the objects which demonstrate his superiority, or by identifying himself with the donor who has the objects to give. The directly personal and concrete outlook of the children at this age is shown by the fact that the desired objects are nearly always tangible; and abstract qualities if mentioned are of the personal type: "a voice like thunder," "long legs," or "curly gold hair." In connection with the small child's choice of ideals it is interesting to note that Barnes† suggested that, as little children selected this type of ideal more frequently, its choice at later ages was indicative of an undeveloped mind. It appears, however, from the present enquiry, that though young children are undeveloped in their ideals and show this in their reasons for choice, yet it must not, therefore, be assumed that the older child or the adult who makes a similar choice is equally undeveloped. The important part of the ideals paper is not the character chosen; this is usually only a peg on which to hang the qualities, possessions, or attributes which the writer desires, and it is from these that one obtains real information about the child. The type of reasons for choice alters with increasing years, and particularly as regards acquaintance ideals; thus, from 10 to 13 the acquaintance is, in the majority of instances, an adult engaged in some occupation which the child admires and holding a dominant position therein. Two typical papers follow.

> Boy (10), School *A*.—"Mrs. ——, because she keeps a sweet shop, and she can sell things and make money and do what she likes."
>
> Boy (12), School *B*.—"Mr. ——, a painter. He has a good easy job, and bosses the men. On Saturdays he stops at 12 and he can go to the football matches."

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* The figures obtained are really comparable. As well as calculating from all the papers of each age, the packets were shuffled and the first 50 or 100 taken, and the figures were virtually the same as those from the whole number.

† *Studies in Education*, 1902: "Type Studies in Ideals."

The teacher is frequently chosen during these years, his power being the obvious attraction. The following papers are indicative of the child's conception of what teaching implies.

> Girl (11), School *C.*—" Miss ——. I should have pretty clothes ; I should teach the girls and correct their sums, and tell them if they were wrong. I would learn them to spell and read and sew, and I would take them for nature walks and take them across the roads."*

> Boy (10), School *A.*—" Mr. ——, because I would teach and write on the board and learn them everything, and I would make them mind me, and I would give them the cane."

Obviously the child's growing desire for power and his wider comprehension of the world now prompts him to visualise himself in a dominant position over his fellows, in a state of economic security or in the enjoyment of certain privileges only open to people of a superior status. It is, however, noticeable that the figures for this type of ideal die away during these years : the child tends to look farther afield for an ideal, and to choose either a monarch, an adventurous character from history or fiction, or a sportsman. At 14 the acquaintance ideal is once more revived, but now from quite a different point of view. Between that age and 16 it is either a school master or mistress, or an older relation, and is almost invariably of the same sex as the writer.† Younger boys and girls choose men or women quite indiscriminately, so long as they have the attributes or possessions they desire. It is interesting to see when recalling the fact that the young adolescent gives many crimes of violence against the person, that he chooses his ideals largely for the sake of personal beauty, strength, or prowess in games, by this time, though, they add moral qualities and scholastic attainments as being desirable. The attitude is still personal, though signs are not lacking that the social sense is developing as the following papers show :

> Boy 14.—" Mr. —— (a master). He is tall and strong and played for Oxford in football. He is a sport and very straight ; anyone would be proud to be like him."

> Girl (15).—" Mrs. ——. She is gentle and truthful, and always sympathetic. Also she has a lovely figure and dresses perfectly. She is very lady-like."

It is plain that the selection of an acquaintance ideal at this stage of development, far from revealing an immature mind, shows rather the reverse. Other types of characters may be, and frequently are, chosen for ethical reasons, but the acquaintance is the only type which is invariably so chosen, and this tendency becomes stronger with increasing years. On the other hand, the choice of ideals from early history or fiction, after the age of about 17, seems to show, with certain exceptions, that the writer is defective morally, even mentally, for the old reasons of power and possession persist in such choices. This does not apply to the selection of scientists, artists, writers, musicians, and so forth. The following instances show the undeveloped minds of the writers, and lists of crimes which they give are also appended.

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* The sense of power gained by piloting a crowd of children safely across a busy city street is here desired.

† cf. Jones, op. cit.

> Boy (18).—" Drake, because I should have had a wild roving life; I should have had plenty of wealth and excitement, and my services to England would make me famous for ever."
>
> *Crimes.*—Murder, steal, lie, adultery, forgery, false pretences, cheating, slander.
>
> Girl (17).—" Rosalind. It would have been so jolly to have lived in the old days, and to have had all her adventures. I should have been the daughter of a duke and, therefore, well known and rich."
>
> *Crimes.*—Murder, gossiping, hating, coveting, theft, arson, disobeying your parents, lying.

The acquaintance ideal continues to be increasingly chosen, and more and more for moral qualities alone up to the ages of 21 or 22, after which it appears to fall again, but as only 32 papers were received for the years 22-26 it is not possible to draw any definite conclusions therefrom. The tendency seems to be, after 22, to revert to possession and a secure position in life as reasons for choice, and this, coupled with more conventional lists of crimes, leads one to infer that, when the unrest and aspirations of adolescence have died down, and the question of gaining a livelihood becomes paramount, man turns from his individualistic attitude and adopts once more the ideas, conventions, and moral values of the herd.

As has been said, the choice of monarchs and of historical and fictional characters has, up to the age of 14, a special significance, and the figures of choice are here quoted. In the case of the former type the sexes are separated, as there are certain differences which do not exist in the latter.

Monarchs.

Age	7	8	9	10	11	12	13	14
Boys, per cent.	22	23	22	23	15	13	13	9
Girls, per cent.	0	7	18	17	13	15	11	6

Historical, etc., Characters.

Age	7	8	9	10	11	12	13	14
Per cent.	6	14	28	33	47	38	31	24

Certain other facts must be here quoted. At 14 the percentage of blank sheets handed in is higher than at any other age, being nearly 5% as against less than 1% at other times. Further, between 14 and 16 there appears a tendency with both sexes, which culminates at 16, the end of the in-looking and homosexual period, to say: " I want to be like no one but myself." The reasons are of the following kind: " I know all about myself," " I have a pretty fair idea of my own abilities," " I am perfectly contented to be as I am," " My future is in my own hands; any change in myself would make things different." " I don't really know about anyone else, but I do know about myself." After 16 this choice disappears until nearly 19, when it is revived by men. They give no reasons for deciding thus, but there is another tendency at this age which may explain both the choice and the silence. At 18 and 19 6% of the students enumerate only general qualities of character which they desire to possess, saying that no one person fulfils all their ideals ; or else they choose a character with the reservation " without his or her faults." Thus the choice of " myself " at this age may be part of a general impression that no individual is completely satisfactory as an ideal, and that the malleable self had better be retained. Certainly it does not seem to be connected with the intensely personal tone in the young adolescent's reasons for choosing "myself." The later choice may also indicate a development to a wider conception of moral virtues and of social inconsistencies which need reconciliation, not in one individual, but in the self. The young adolescent sees the world " little and round like an apple lying in the palm of his hand " to be shaped to suit the self ; the older individual sees it as overpowering and unyielding, and realizes that the self must be shaped to suit the world.

THE DESIRE FOR POWER.

It was suggested in the investigation in regard to crimes that the young child's moral code was based on the categorical prohibitions of its elders ; also, in the case of children sheltered from the harsh experiences of a street environment, on " book crimes," quite remote from his real life. It was further premised that, up to 13, children have no personal moral code, that is to say they accept as evil what the world so stigmatises, but impersonally.* Also, that virtue does not make the supreme appeal to them. It must again be noted, though, that the better class child develops somewhat earlier in this respect, in so far that, after 10, he tends to give perhaps one or two sins of the spirit in his list, but all the evidence shows that, up to 13, the child's chief preoccupation is not with his spiritual self, and this is confirmed by the ideals papers of children between the ages of 7 and 13 in all four types of schools. The reasons for wishing to be like the persons chosen are indications of a conscious or subconscious desire for power. The term subconscious is deliberately used, for the 8 years old child selecting an acquaintance does not realize that he wants power as does a 12 year old who writes : " Napoleon, because he was a great leader, and all his soldiers had to obey him." Within this general tendency to desire power still exists the development from the ideals arising out of the direct personal relationships of the child to those which are culled from a wider world of experience. There are, moreover, frequent instances where children give conventional ethical reasons for desiring to resemble their ideal, but the dominant desire stands forth clearly and boldly throughout, and in the majority of cases the conventional reasons are tucked away at the end.

A number of papers have been drawn at random, representing each of the four types of schools. In addition, a few papers have been deliberately selected as possessing special features of interest.

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* They give, for example, crimes which they could not themselves commit, such as " murder," " embezzling," " making false coins," " piracy," " cannibalism," and so forth. From the nature of these it is obvious that the children cannot have given them serious consideration as offences from which they themselves must refrain.

BOYS.

Age 7.

A—Mother.—I would be my mother because she buys clothes for me and toys and motors, and an engine set for me and a new cap and new boots.

B—A Train Man.—Because he drives a train.

King George.—Because he has to reign over the people.

C—Robin Hood.—Because he loved fighting, and because he was a strong man. He was rich and a brave fighter, and he had a lot of soldiers. He had a raft, and he could climb trees.

Mr. O——.—I would like to be him because he do drive a train. I would take people to places you would go to the sea. I would take the people to Teignmouth. I would look out in the sea and go on the pier. I would go in a boat and go in the sea, and if the boat started to sink I would put the lifebelt on me and jump out in the sea. I would not be drowned; I would swim to the land and change me clothes, and drive you home again.

D—None received.

Age 8.

A—Jack and the Beanstalk.—Because he killed the giant.

B—My Aunty.—Because she gives me pennies and apples.

C—Fred Northam.—Because he is up in Standard III.

D—My Mother.—Because she is grown up.

Age 9.

A—King George.—Because of his riches and palace and jewels. He can have servants to wait on him and he would rule the land. Because he goes on the sea for trips and voyages.

B—Stevenson.—Because he was the first man to make an engine, and when he tried to make the engine he did not fail. He looked at what he was doing when he was making the engine.

C—The Policeman.—When I grow up I shall be a policeman and try to be strong just like the other policemen what goes about, and people would steal things and if I catched them I would take them to the police station, and they would be hanged. And when traffic goes and has a bash-up I would go over and help them, and if boys and girls quarrels I would stop them and make them play all together. If boys swear I would tell them not to and take them to the Reformitary and men would fight and I would put them in prison and they would be killed.

D—King George.—Because he is a high man and rules over a great country called England with 100s of people. He lives in a great palace.

Age 10.

A—Robin Hood.—Because he can climb and shoot an arrow very well and ride a horse, and he can throw a piece of wood in the air and shoot two arrows at it.

B—The Pope.—Because he is very great. He is honoured by nearly every one and has soldiers to do what he likes and he rules over a number of lands. He is well known.

C—Mr. P——*—.He can judge people and he can put them in prison. He can tell them how long to stay in prison and he can ask the people why they did wrong.

D—Ajax.—Because he was strong and had a voice like thunder.

Age 11.

A—Drake.—Because I should have been the first Englishman to sail around the world, and I should have won the (Spanish) fleet.

B—Prince of Wales.—I will be rich and able to go round the world and have what you want. You could have soldiers of your own. When my father died I would be King of England. I would be captain of a man o' war.

C—A King of C.15.—Because he can get anything he likes in his own land. He could order his subjects to do anything he liked. He would not go to school he would have anything he liked to eat.

D—Drake.—He was brave he fought many battles for England, and he was second in command against the Armada. He went to America and plundered the Spanish treasure ships. He was always good and kind to his sailors.

Age 12.

A—A Station Master.—Because he keeps the trains in order and you know what time the next train is coming in. You are in a very high position and the porters, guards, and drivers have to obey you.

B—Cromwell.—He was a great man, he was brave and he had power. Because he was always in danger and always fighting. Because he was a leader of men.

C—Drake.—He is my favourite amongst the old Devon sea dogs. He was the leader of the Devon sea dogs. Through his leadership he made Devon famous and he was bold.

D—Wolfe.—He was a good leader and a true Englishman. Was very steady. Kept his men in order and made them obey.

Age 13.

A—Dick Pym.—He can play so well at goalkeeper. He is a sportsman and honest. He has won a cup medal and he played for England. He is one of the best goals in England, and can take defeat like a man. He was the first Devon man to play for England, and he is so tall and strong.

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* The Lord Mayor of the City.

B—Prince of Wales.—Many long voyages, and expeditions on a ship. He goes to places such as large places to open them, or to unveil memorials. He gets honored wherever he goes. He is the heir to the throne of England. He is known everywhere and is not proud.

C—Prince of Wales.—Because if I was him I could travel round the world and see all the sights there are to see. Because every one likes him and he is most popular and a sport, because when he goes away such a fuss is made of him. He is modest.

D—Prince of Wales.—I should like to see the world. I should like going about in state and the thought of being King some day. I should like some of the sport he has.

GIRLS.

Age 8.

A—Doris.—Because I love her. She has a pink dress.

B—Jesus.—I could teach the people to pray. I could make them believe in God.

C—Mother.—I would be like mother. She is kind and gentle. She gives me fruit and sweets and money. When I get ill she goes to get the doctor and helps to make me better.

D—None received.

Age 9.

A—Betty.—She can read. She has black hair and a pretty face. She has nice clothes and white teeth.

B—Una.—She looked so nice. Is a princess. She had fair golden hair and was quite nice. She had a lovely dress. She was not very strong. Her father was the King and her mother the Queen.

C—Mr. J——.—He is rich he is tall he is kind.

D—My Cousin.—She learns music. She is kind. Good manners. Dark. Rich. Big in size. She is older than me. She is at College.

Age 10.

A—A Rich Person.—Because they would have a nice house. Then I would have a lot of clothes and a lot of jewellry. I would have servants to work for me and a lot of shops. I should give money to the homes.

B—The Sleeping Beauty.—She had fairy godmothers and they gave her good wishes. She had a royal nurse girl. Her father had golden plates made for her, and her mother gave her a little boy playmate. And when she grew up she married a very rich prince.

C—Cinderella.—I should like to be Cinderella because she went to a ball three nights following, and she had beautiful dresses to wear and jewellry. She was made a queen and lived in a palace.

D—Someone Who Rescued Someone.—Because I should like a medal, and I should know I had done something to please someone. It would help me not always to think of myself.

Age 11.

A—Elizabeth of Hungary.—She was so brave and helped other people. She helped the people if they were ill. She was well thought of by all the people and they were sorry when she died.

B—Florence Nightingale.—She left England and went to Russia to help the wounded soldiers and was very kind to them and did all she could to help them. She would go around every night with a lamp and ask them if they would like a drink. They called her the "Lady with the Lamp." The soldiers liked her. The Queen gave her a present, she would not take it and gave it back to the Queen. The Queen liked her very much, she was always happy.

C—Teacher.—Because I should have nice long holidays. I should not be unemployed. I should have easy working hours, and most likely good wages if I was a good teacher. I should not have to stay late at work in the evenings.

D—My Cousin.—She lives in Australia and goes to school on a donkey.

Age 12.

A—Joan of Arc.—She always thought of her own country. She helped the French to fight the English. She put on armour and rode on a white horse. The English burnt her, but if you go to France you will see a statue of her.

B—A Princess.—Because she can have what she wishes for, plenty of money. She can do as she likes, she has a big nurseries to play in and plenty of toys. When I grew up I should marry a prince.

C—Lucy White.—She was a very plucky girl, and although the girls at her school were unkind to her she was not unkind in return. She saved a man's factory from being destroyed by men who were plotting against it. In the end she was rewarded very well, and the girls at her school were always kind to her afterwards.

D—Portia.—Because she was good at speaking. She was very rich. Most of her suitors were nobles. She was kindhearted.

Age 13.

A—Elizabeth.—Because you may rule the land, and you may help the people and give peace to the country. Have a beautiful garden and go to different parts. You may have a lovely dress that sparkles and diamonds.

B—Mary Pickford.—She is a film actress. I would like to go round the world, and see different towns and countries. I should act on different stages. She is very rich.

C—Queen Victoria.—She was beautiful. She ruled her country well and gained different parts of the Empire. Everyone admired her. She ruled for so long.

D—Florence Nightingale.—She was brave and kind to the soldiers, she saved a great number of them, for which she was greatly honoured.

The desire for power is similarly shown in the choice of monarchs (*see* page 97). The following papers show the children's attitude towards kings and queens and typify their conception of them as being pre-eminently possessors of limitless wealth. It is interesting to notice that this idea must, in the majority of cases, be held in spite of lessons on the characters, in which it is most improbable that the teachers laid stress on these characteristics of monarchy. Many of the papers which give members of our own Royal family are from a school which teaches civics by means of lessons arranged round the persons of the King, Queen, Prince of Wales, and Princess Mary.

Boy (14), King George.—Because you have plenty of money and a good house to live in, and can go to some parts of the country. And when there is anything on you has good clothes to wear, and everyone thinks about you. (School *A*.)

Girl (13), Queen Mary.—Because she has robes, jewels, castles, servants, waitresses, gardens, horses, is the highest in the land, and can demand. (School *B*.)

Girl (13), The Queen.—Because she has plenty of money, and though she has a lot of business she can go for sea voyages and do whatever she likes. (School *C*.)

Boy (12), The Prince of Wales.—Well guarded by detectives. The country keeps him, and will when he is King. He does not have to make up his speeches they are written for him by his secretary. He can go to any place in the British Isles and is made ever such a fuss of. He can wear ever so many different suits of clothes. (School *D*.)

Boy (11), The King.—I should be rich and rule over England, and I would go abroad whenever I like. (School B.)

Girl (10), Queen Elizabeth.—Because she is brave and goes to battle to fight, she dresses very beautiful and lives in a palace. (School B.)

Boy (10), Richard the Lion Heart.—He was brave and he lived in a castle and he was rich, and he won many battles and had a lot of Knights. (School D.)

Boy (9), King Arthur.—Because I should have a lot of land and horses to ride, and a beautiful palace and a beautiful crown. (School D.)

Girl (9), King George.—Because he has a lovely palace and gold and silver, a lovely crown with a big diamond in it. He is the luckiest man in England. (School B.)

Boy (8), King George.—Money, servants, rings, jewels, gold, guns, medals, silver, horses, swords. (School A.)

Girl (8), King Edward.—I will have a crown and servants and soldiers and houses and boats. I will rule the land kindly. (School C.)

These few papers are typical of the general attitude of the children towards kings and queens, in no matter what type of school. Many papers could be quoted on other eminent personages, historical and fictional, but it is enough to say that the general trend of the reasons is " because he was a leader," "because he got riches for his adventures," "everyone knew about him," "he could go where he liked," "he could do what he liked."

The striking feature of these papers is that, up to 13, the children have almost invariably ignored or taken only the most perfunctory notice of the moral aspects of all these characters: the very qualities, in fact, on which their teachers would be sure to lay stress. They merely select, or even wrongly attribute to their ideals, the only qualities which they can conceive of as desirable. Another instance of this almost exclusive selection of attributes which they wish to possess is shown in the reasons given for the choice of Christ. Certainly the children write "because He was good," "because He was kind," but the general tone of the papers is better represented by the following quotations: "Because He could walk on the water without sinking," "He could do miracles," "He knew everything that was going to happen, beforehand," "He was very powerful," "The King of Kings and Lord of Lords," "He could feed 5,000 people from nothing," "He died to be the Hero of the whole world," "Everything belongs to Him," "He could make water into wine," "The cattle on 1,000 hills are His," "He was God's only Son."

It appears, on the evidence of the papers that, from the Scripture lessons he receives, the child up to the age of 13 selects those attributes of power and estate which most appeal to him in the life of Christ, and ignores or makes only slight mention of the moral qualities of the Saviour. Further, when moral qualities are named they have the air of being repetitions of the teacher's words or notes. For instance, in one class of girls every child who chose Christ wrote this formula, in this way: "He had a sense of humour (shown in the parables)."

There is probably a fundamental truth underlying this choice, for the possession of virtue is the possession of truth, and its realizations are, in effect, power.

In addition to quoting widely differing papers on the same lessons, it is possible to say that in no case do the papers of any standard or class show strong traces of the children's being under the influence of one particular person. There is, perhaps, with children up to the age of 10, a tendency to choose a character from a recent lesson; but even then, as is shown by the papers given above, different aspects of the character have struck different children. The most hackneyed attributes of certain well-known people are often omitted. Thus, George Washington is cited—not "because he could not tell a lie," but "because he had many adventures and was a brave soldier." One boy sees Napoleon Bonaparte as a "law-giver," another as a "military genius," another as a "leader of men." Elizabeth appeals to some girls because of her "wonderful clothes," to others on account of her position; whilst one girl envies her her "many male admirers."

It is evident, from the mass of the ideals papers, that we obtain a broad view of what youth really considers to be "good" and "desirable," and not a second-hand recapitulation of what is held up to it as so being. Though the child has, from his earliest years, the code of social values impressed upon him at every turn, yet he still selects and chooses amongst the ideals presented to him ; he even secretly entertains the conviction that other things are better than these ideals. All the ideals papers go to prove that—given the opportunity to express themselves freely—children do not repeat the aphorisms and clichés of their teachers, citing virtue as the highest good, but stoutly affirm, up to a certain age, that wealth or adventure, power or position, are the most important things, each child according to his individual ambition. In the light of this ambition he studies his ideal character and sees in it those qualities which he desires.

Conclusions.

It appears that the type of character chosen alters with increasing age. The child from 7 to 9 years old chooses from his little ring of acquaintances a child friend or else a relation ; from 10 to 13, children choose adult acquaintances to a certain extent, but more generally a king or a character which has had a gay and adventurous life. In early adolescence the acquaintance ideal is revived in the person of an older friend of the same sex as the writer ; historical characters, when chosen, are selected for social services ; by 19 the characters are either acquaintances, well-known contemporaries, or great social servants of the past century. Whilst, however, the characters chosen show differences in age outlook, the most important part of the ideals papers is the reasons given for the choice of the character. The young child will choose Captain Cook " because he could go in a boat." The 11 years old " because he visited all parts of the world." The adolescent " because of the great services he rendered to his country." At 7 the King is envied for his crown and jewels ; at 17 for his opportunities of serving his subjects. The main desire of all pre-adolescent children is for power to assert themselves as strong and rich and dominating before the world. The young adolescent wishes to be powerful but good, the young adult to be a noble character.

It is probably not over-stating the case to say that not only do the children up to the age of 13 ignore ethical ideals, but that, to a very great extent, they do not understand them. The small domestic virtues they have naturally learned, but, as has been said, they do not mention them. The great social virtues of self-sacrifice, service, tolerance, heroism, they literally do not comprehend. They may occasionally give as reasons for choosing Christ that " He was unselfish," " gentle," or a " good Son," but His " Mercy " and the " Atonement " are never referred to before the age of 15.

The general inference to be drawn from the whole enquiry is that children define as wrong what they are told is wrong up to adolescence, without qualification and without real conviction. Of moral good they have very little conception, and for it no predominating desire. As adolescence progresses they question, or at all events consider, the *obiter dicta* of society, and at the same time begin to realize how and where they can serve society, and how far they owe it their allegiance.

CORRELATION BETWEEN MENTAL AND MORAL DEFECT.

Dr. Cyril Burt* has discussed the question as to whether moral defect necessarily implies mental defect, and he asserts that moral defect is really the outcome of " an extreme degree of emotional instability, due to inborn factors," and is not always accompanied by defect of intelligence. Moral judgments passed in the " crimes " test, though they seldom show any traces of this " temperamental instability," do tend to prove, so far as individual children are concerned, that there is no close correlation between intelligence and the capacity to pass moral judgments. All papers written by children who were two or more years below the average age of their class or standard, were carefully considered, and it was found that, on the whole, the lists of crimes corresponded with those of the class to which their age would have entitled them to belong. Where there was marked retardation, enquiries were made at the school as to the general behaviour of the child, and it was ascertained that, in only a few cases were such children what is termed " tiresome " or " difficult." On the other hand, children were often found in, or even above, their normal class, who gave infantile lists ; for instance, children in Standards 5, 6, and 7 would give " kicking," " spitting," " pulling faces," and other crimes, which normally disappear in Standard 3, or would fill their papers with " horrors." Such children were found to be, almost without exception, extremely troublesome in school, and had, in some cases, already given evidence of being morally defective in more serious ways. At the same time, they were quite normal in their scholastic attainments, one or two being distinctly " bright."

It will probably be contended that the judgments passed by these children were purely formal, but it must be remembered that from the large numbers of papers received a definite normal list for each stage of development can be established, and that any marked deviation from this normal was, as evidenced above, generally found on enquiry to be significant of moral defect, whilst, on the other hand, children intellectually retarded, but with good school characters, gave, as a rule, lists characteristic of their chronological age. At the same time, it must be remembered that there is, taking the results of the enquiry as a whole, a general relationship between intelligence and the capacity to pass valid moral judgments. Both imply adaptation and that " to be moral and to be reasonable reflect the same fundamental capacity in human beings ; that is, the capacity of adapting one's behaviour to the facts of real life."†

If the stages of development, as evidenced in this enquiry are considered, it is plain that, in each stage, the normal children have adapted themselves to the life of their environment. The young child conforms to the nursery or street code ; the boy of 11, looking out into the world, accepts its moral values, so far as the crimes in which he is most interested are concerned, and the gradual adaptation of the adolescent to the whole code of social morality is plainly seen. This development coincides with the development of reason and intelligence as connoted by the progress of normal children through the school.

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* Vol. III, Part III, of the *British Journal of Medical Psychology.* 1923.

† Dr. I. Levine : " Reason and Morals," p. 11.

CORRELATION BETWEEN CRIMES AND IDEALS.

As has been said, there is a general correlation between the crimes and the ideals, in so far that the several stages of development and the main characteristics of different ages are distinctly shown in both sets of papers ; but marked correlation between the two papers of single children only occurs in particular instances. This is only to be expected, for the crimes judgments were naturally based, to a great extent, on the child's conscious social experiences ; whilst the ideals test was calculated to elicit the individual's desires, and, therefore, showed more clearly unconscious motivation. Thus it is only when there appears to be temperamental instability, obsession or conflict that correlation appears between the two papers, as in the instances quoted below.

(1) Girl, 13.—Known morbid tendencies, has shown herself to be sexually morally defective.

St. Agnes.—She believed and had faith in God. She was not afraid to die. She had no fears for laws, threats, or punishments. She died as a martyr to God, the lies, the whips, the scourges, she took no notice. She tried her best to make others Christians. She was no coward but died like a Christian. She was beautiful. When the law was made that all Christians found preaching and still carried on as a Christian, should be burned at the stake, she was the only one that carried on. Even at the stake she would not give up her faith for life, and she suffered at the stake as a witch.

Crimes.

Cruelty, theft, lies, put you to death for innocence's sake, to spite you, to make a drudge of you, to hate you, to kick you about, to ill-treat you, to carry you away from those you love, to keep you waiting for death, to beat you with sticks with salt on, to starve you, to burn you.

(2) Girl, 12.—Home strict and unsympathetic. Later she attempted suicide by drowning in the sea.

Nelson.—Because he was sensible, he stuck pains and died like a sailor.

Crimes.

To be always doing wrong. To steal, to kill, not to try, to disobey.

(3) Boy, 12.—Cinema influence on a retarded character is here shown.

Rudolph Valentino.—Because he is handsome, highly talented, and fascinating. His films are so good. He has wonderful eyes, at times they are as slumberous as a tiger's, at others they flare up with passionate love. He is an exquisite lover, fascinating girls and women alike. Because of his quiet but stately bearing.

Crimes.

Put anyone's eyes out, to murder, idolatry, false witness against thy neighbour, gambling, adultery, suicide, to lead a blind person out of his way, deceit, burglary, to break the hearts of women, forgery, to pretend that you like a person and to say nasty things behind his back, to poison.

Boy, 16.—The ideal is a girl acquaintance, with whom he is obviously in love, whilst the crimes declare the conviction that such love is wrong. He also mentions more crimes of a sexual nature than is usual at this age. In appearance the boy is small, ugly, and ungainly.

Miss ——.—She is the most wonderful person, has startled all the town folk by her wonderful ability, has an exceptional figure with a very beautiful face. Is to me as Beatrice was to Dante. Has a voice like a nightingale, much similar to Dame Clara Butt. Will undoubtedly make a charming wife. Also will win a beauty prize next time she enters.

Crimes.

Bigamy, divorce, murder, breaking the ten commandments, adultery. Being a lover when a youth, kissing and cuddling, mocking the dead.

Boy, 8.—Retarded in school work, pretty and babyish.*

A Bear.—Because I should have a soft skin.

Crimes.

Bite, pinch, cat, dog, cut, axe, kill.

His teacher, an extremely sympathetic man, questioned him, without any suggestion, on the inclusion of cat, dog and axe in his list of crimes, and obtained the following explanation: "I must be good to cats and dogs, but they are wicked if they bite me. I must not play with the axe, and the axe must not cut me, it is bad if it does."

Several other papers are of interest in regard to the question of the manifestation of unconscious motivation, though there is no correlation between crimes and ideals. One is that of a small, pale, tubercular girl, who chose "An apple, because it is so rosy." Several puny, undersized lads of 14 wished to be policemen, though they did not always offer strength and stature as reasons for choice. It was further found that Robinson Crusoe was a favourite character amongst both boys and girls who came from crowded and noisy homes.

Two things touching on unwitting influences appear from these papers. The first is that, if the writer has a particularly persistent desire, worry, or tendency, he or she quite unconsciously expresses it in the paper. The second is that many children probably have sub-conscious cravings such as for solitude, peace, or health of which they are not in the least aware.

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* Possibly sadistic.

When Should a Child Begin School? An Experimental Enquiry.

By ERIC M. RHODES.

In 1925 I undertook, at Professor Valentine's suggestion, to repeat with some further analysis and elaboration, Mr. W. H. Winch's work of 1904, concerning the age at which a child should enter school. The most obvious method of testing the differing effects of entry at different ages is to note the standards reached by the three-year entrants, four-year entrants, and so forth. In comparing, however, the progress and position in school of a child who entered at three with that of a child who entered at five, it is a mistake to rely too much upon the assumption that a child is promoted solely upon merit, whereas in quite a number of cases children are promoted largely because of age. It would seem desirable, therefore, to make special tests and to rely on them to a greater extent than is done by Winch.

We are concerned with the normal, average boy, and thus must eliminate all abnormalities. It seems to me that Winch in taking classes *en bloc* has erred. If a boy entering a class is two years behind the normal age of a child entering that class Winch calls his progress mark 0; if twelve months behind it he calls his progress mark 12; a child who is at the average age of the class has a progress mark 24, and one is added on for each month the child is below the average age. Winch then proceeds to correlate age of entry and progress mark. There are, however, two variable factors:

(1) Intelligence of the child in question;

(2) Age of entry.

It is more probable in cases where the child is two or three years behind the normal age of entering a standard that the child is of lower mentality than average, and that age of entry has made small difference. I thought it advisable, therefore (*a*) to trust only to marks actually obtained either in terminals or special tests; and (*b*) to examine boys of the same age in the same class, in order to be able to know that the only difference between the individuals being tested, likely to act as a factor in determining performance, was the age of entry. If among the individuals being tested there was a superiority shown by those who entered at three years over those who entered at five and a half years, a good claim could be made for early entry in schools.

The enquiry was carried out with a view to finding out (1) Whether there is any advantage from an educational point of view in a child entering school at an early age such as three years or four years rather than at five or six years; (2) Whether any such advantage (if any) was general or confined to one or more types of subjects.

The tests were carried out on children of the age of twelve years.

The tests were carried out in the following subjects: Mathematics, Memory, General Knowledge, and Hand and Eye Work, with the further differentiation of tests here shown:

(1) MATHEMATICS:

- (*a*) Accuracy;
- (*b*) Problematic;
- (*c*) Routine.

(2) MEMORY:

- (*a*) Poetry;
- (*b*) Geography;
- (*c*) History.

(3) GENERAL KNOWLEDGE:

A list of general knowledge questions was given to each child to answer.

(4) HAND AND EYE WORK:

Modelling;
Pastel Work;
Water Colours;
Claywork;
Precision in Measurements.

The mark of any boy in any of the above sections was arrived at from:

- (*a*) Consideration of last 12 months' terminal marks;
- (*b*) Personal knowledge of teacher in charge;
- (*c*) Tests carried out by the writer.

(1) In the mathematics the test conducted was in the nature of a terminal examination, the paper being divided into (*a*) sums in which mere calculation was involved such as large fraction sums, multiplication, addition of figures; (*b*) sums of a problematic nature, such as: "*A* can score 100 points in a game while *B* scores 80, and *B* can score 100 while *C* scores 75. How many can *C* score while *A* scores 50?" (*c*) sums which required a knowledge of routine such as practice, long division, etc.

(2) In the memory tests the boys were given a certain time to learn some 30 lines of poetry. They were tested separately after each one had had the allotted time. Blank maps were given and they were asked to fill in rivers, places, etc., that they had learned in geography. They were given a chapter of history to learn and then had a short test on it afterwards.

(3) It should be noticed that great care must be exercised in selecting questions to test general knowledge, as questions designed to find the intelligence factor of a child must not be used, the test being intended to find what effect the training has had on the child.

A list of general knowledge questions was given each boy to answer. One such list is shown below:

(i) How far is it to London?
(ii) Name the surrounding villages for a distance of five miles.
(iii) Name the holidays you have in each year.
(iv) Why is November 5th "firework day."
(v) Why are there 24 hours in each day?
(vi) Why are there 365 days in a year?
(vii) What is a leap year?
(viii) How many days are there in February?
(ix) Why does a ship float on water?
(x) What are the speeds of a man walking; a man running; a horse galloping; a motor car racing?
(xi) Who first swam the English Channel?
(xii) How large is a monkey?
(xiii) What are necessary for you to be able to live?

(4) In the hand and eye work the boys were tested in actual manipulative skill. In modelling they were asked to model an object that was placed in front of them. Similarly, in the case of crayon and colour work. They also measured the volume of many rectangular and cubical bodies.

Below is given a selection of results, which are typical of the general results.

AGE OF PUPILS, 12 YEARS.

A School.

Subject.	Entered at 4.	Entered at 5.	Entered at 6.
Mathematics	4.10	4.03	4.50
Memory	3.73	4.01	4.12
General Knowledge	3.03	3.96	4.60
Hand and Eye	4.10	3.65	3.60
Number of pupils tested	25	28	9

B School.

Subject.	Entered at 4.	Entered at 5.	Entered at 6.
Mathematics	2.21	2.52	2.61
Memory	2.83	3.01	3.02
General Knowledge	2.41	3.34	3.35
Hand and Eye	3.32	2.61	2.18
Number of pupils tested	27	29	11

C School.

Subject.	Entered at 4.	Entered at 5.	Entered at 6.
Mathematics	3.45	3.79	3.81
Memory	3.81	3.84	3.81
General Knowledge	4.00	4.23	4.32
Hand and Eye	4.17	3.91	3.87
Number of pupils tested	15	16	9

For each separate section in each subject an equal mark was given.

From these results it would appear that the only advantage gained by entering at the age of four years would be one of mechanical manipulative skill with material. Those who enter later do decidedly better in arithmetic, and at least as well in tests of information. There seems no doubt that young children can make good progress in subjects calling for manipulative skill. Give a child of four years a piece of clay and tell him to make a simple model such as a rectangular box or cupboard which is in the room and he will produce something which is reasonably like it. He will gradually get better at this and will feel that he is doing something. This satisfaction urges the child onwards to more effort, and by the time he is six years of age he is far superior in this branch of work than a child who has not done any. I do not think that there is the same natural development (due to mere growth, without special training) in capacity for manipulation of material from the age of four to six years as there is in the intelligence factor. Therefore the child who enters at the age of six years progresses at about the same rate in hand and eye work as if he had entered at four years, and thus throughout the school remains behind in this subject. On the other hand, a child of four years has not developed enough mentally to be able to make any headway in arithmetic. Consequently very little progress is made during these first two years, and a corresponding amount of non-satisfaction of conation occurs which results in loss of interest, the novelty of the subject being meanwhile blurred, before the child can take advantage of the teaching of this subject. The child who enters at six years enters at an age when he is capable of taking advantage of the teaching of arithmetic and the novelty of the subject enables him to build up a solid groundwork of the subject while it still has its first appeal; an entirely different state of affairs from that of the boy who entered at four years.

In the case of general knowledge, a child outside school talking to its parents and strangers during the day will get as much information, and probably more, during the years from four to six, as if it were in an infant school.

Home Conditions and the Age of Entry.

Enquiry was also made into the home circumstances and environment of the children, and a mark given. A list was made of the children who had taken part in the test and the school attendance officers, teachers, and the head masters were all consulted. In every case one was enabled to get a personal report on the environment and home life of each child in question.

The following marks were given :

	Excellent.	Good.	Fair.	Moderate.
Home Conditions	5	4	3	2
Environment	5	4	3	2

The average for the children who entered at four, five and six years was also found.

A selection of results is given below :

Entered at	No. of Children.	Average mark— Home.	Average mark— Environment	Average Home and Environment
Four years	67	2.63	2.38	2.50
Five ,, ...	73	2.55	2.41	2.48
Six ,, ...	29	2.53	2.48	2.50

The average mark of home and environment is almost the same for those who enter at four, five and six years. From this it seems, as Winch concluded, that children are not sent to school at four years, merely from poorer homes, to be out of the way. The first two years of school life at present seem, therefore, to be using up money which could be well spent in other branches of education.

The Place of Art and Craftsmanship in Education.*

By B. J. FLETCHER.

The necessity for beauty in life, and the injury to human nature caused by the suppression of this need, is widely acknowledged. We no doubt agree that education should provide for growth of æsthetic faculties and for opportunities for creative work involving artistic sensibilities; English studies, poetry, the drama, and music provide some opportunities. When, however, I plead for a particular group of artistic studies—those dealing with the arts of form: architecture, painting, sculpture and the lesser arts—it may easily seem to be special pleading and undue stress of those things with which I am closely concerned. What we all want, I take it, is a balanced curriculum which will give opportunities for varied talents. Possibly such unfair stress as I am likely to make may be avoided by a wide view of the part Art has played in great periods, and by a comparison of those periods with our own. If I had the ability, which I have not, there is not time now to discuss what was the balance of interests which made Greece what she was in her best days; what interests gave special value to the Middle Ages and to the Renaissance. So much, however, may be briefly stated: the Greeks excelled in artistic power as well as in intellectual lucidity; the Mediæval period was an age of religious faith and of outstanding achievement in architecture, painting, woodwork, ironwork, poetry and romantic literature, but of absence of love of truth for truth's sake as we know it; that the succeeding Renaissance period displayed a keen desire to discuss, and to know, developed a wonderful art, but it let morals slip.

In modern times, while there has been real effort to act uprightly, and a genuine desire to know and seek truth, Art has been reduced to a negligible quantity. By comparison with other periods, we live in an age of unparalleled materialism and sordidness.

Morality and intellectual attainment, or art and morality, or intellectual attainment and art, are alike insufficient. An all-round development is essential for a complete human being. We would combine, if we could, all the excellences, or at least find opportunities for the healthy development of all good gifts and faculties.

At present such a complete circle of opportunities does not exist, and did not exist during the nineteenth century. If it be conceded that the artistic attainment of the Greeks is an indication of their spiritual attainment, what shall we say the aspect of cities like Birmingham and Manchester indicate? Why is it thought to be more properly learned to know all about Greek art and life than to assist in establishing the Greek ideals of art and craftsmanship in our own time? Is it beside the mark to point out that the men who raised the Parthenon, and carved the Elgin Marbles; who struck the coinage of Syracuse, or made the statuettes of Tanagra; the carvers of the porches at Chartres and the painters of its glass ; the men who reared the churches at Pisa or Westminster, or the men whose work fills the finest gallery in the world—our National Gallery—could not have passed the School Certificate Examination, and that those who have passed that examination have not enriched the world in like manner.

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*A paper read to the Education Club, meeting at the Training College, Derby, on January 20th, 1926.

Though careless of the individual life, nature is careful of the type, and perhaps it is fair to ask if the budding successors of the artists and craftsmen of the past are recognized as they appear, and if they are given suitable opportunities in their formative years. It may be true that artists, as well as poets or mathematicians, are born and not made, but being born we would not smother them. A comparison of the work and interests of great periods with, say, the aspects and interests of Birmingham and Manchester, suggest a lack of proportion in the valuation of various sides of education.

It is urged that to give lessons in Art to those who show little aptitude is waste of time. All, however, have to attain a certain standard in some subjects, whether they show promise or not, and if Art be taught for its value as education, all can, and should, do serious work in it until the time a pupil may specialize with safety. This work may be of appreciation only as it is in literature. Some craftwork may be taken up in which a lad with artistic sensibility and constructive sense may find his bent more happily and profitably than in the realistic draughtsmanship and painting which for too long has seemed to be the only goal of the art classes.

The selection and training of pupils of outstanding promise only leads to the isolation of both subject and pupil. Ultimately this isolation leads also to lack of employment for the good craftsman and artist, and has led, among other things, to that decay of all fine craftsmanship which we have seen during our days. Arts and crafts have flourished most healthily where they have been part of the common life of all. Isolation of the artist begets self-consciousness, which is as a canker to a rose.

To deny education in arts and crafts to the average boy and girl is to rob them of a range of cultural interests as valuable and as fruitful for profitable work and leisure as any interests may be. For it is difficult to find better scope for after-school interests and work than may be opened up through studies in Art. It leads, among other things, to the enjoyment (as only those can enjoy who have learnt to see when they look) of nature's inexhaustible beauty and fine design : to opportunities for creative work in many fine crafts, and to the spiritual refreshment which comes from appreciation of the lovely things in which men in all ages have expressed the best they could compass.

Matthew Arnold pleads somewhere for a culture which shall come of a knowledge of " the best which has been thought and said in the world." He should have added to " the best that has been thought and said," " the best that has been done." Anyone who visits Rugby School must think this too, for its buildings show the mid-nineteenth century blindness to beauty. The fact that the word Art calls up first to the imagination picture galleries and museums is evidence that Art is an exotic among us.

Art in schools is usually thought of as the art of drawing and painting. This is unfortunate. It would be well to consider the relation of all the arts : poetry, music, the graphic arts and crafts to each other. If their affinities, separate spheres, and values for education were clearly shown, we should be surer of our ground, and the graphic arts and craftsmanship would have an assured place. In many schools these subjects are still regarded somewhat as extras. Advertisements for teachers, after mentioning many necessary subjects, often end with " and drawing."

In a discussion of this kind it seems almost inevitable to begin with a definition. Croce and Professor A. J. Smith have defined Art as " a reality or spiritual essence behind its various manifestations." "Art," they say, " has nothing to do with making or doing." A recent lecture on "Art and the Material," by Professor Alexander, contradicts this view.

I know nothing of philosophy, but my experience as an artist and craftsman leads me to agree with Professor Alexander when he says, " without the actual physical embodiment (in words, sounds, pigments or stone), even if the actual embodiment be only imagined, the artistic experience does not exist." For a common source of inspiration may lead several artists—a sculptor, a painter, a musician—to create works of Art and each work may be unintelligible to the artists who worked in the other media.

A statement of fact may be heightened through the telling of it into a thing of Art.

" And I know not if, save in this, such a gift be allowed to man,
That out of three sounds he frame, not a fourth sound, but
a star."

These are not definitions of Art, but they suggest where Art begins.

In music, literature, and the other arts, there is, of course, a hierarchy; a ladder of values, but it is impossible to say, here craftsmanship ends and there Art begins. The separation of Art from craftsmanship has brought about the present general conclusion : that the one is purely ornamental and the other solely utilitarian. Prejudice begotten of this leads school masters to consider art studies as " frills," and accept any ugly botching as " handwork." Yet any piece of worthy work may bear the mark of an artist. For beauty is present in its due degree in all happy and skilled craftsmanship, however humble it is. Art is a kind of thanksgiving. Knowing the damaging separation which exists between Handwork and Art classes, I want to press this point. Some time ago two inspectors came to see a group of handwork, and were puzzled by it. The one said that although the work was well done, it was obviously art work, and so did not come within his province ; the other enjoyed its beauty but proved that it was handwork in the technical sense, and so not within the terms of his reference.

A journal devoted to education published not long ago an article on School Examinations and the Universities. After discussing a new group for Commerce, which had been added to the four Higher School groups, and questioning its suitability because there was no mention of Accountancy in the new group, the article goes on to say : "May I add a last remark about the London General School Examination ? . . . . At present, boys with nimble fingers but brains not so nimble are at a disadvantage. This disadvantage is an unfair one, for a boy's masters have no right to say, when he goes out into the world : " This boy's head is developed, and it is right ; that boy has developed the cunning of his hands, and it is wrong.'" (In passing, I may say that I do not know any school for general education where a boy has the fair chance of developing the cunning of his hands which is here implied.) But it is suggested that Accountancy should be specially provided for : a subject with a definite and, shall I say, narrow, vocational aim towards which already the large proportion of time now given to arithmetic, and other subjects of direct use in a counting house, would seem to be more than an adequate allotment of school time ; while it is questioned if a boy with a bias towards the Arts (out of which Commerce and Accountancy batten), should have opportunity for his natural aptitudes and for developing his brains through his hands. In spite of the sympathy for development through handwork contained in the remark quoted above, is there not an implied fallacy in opposing brains to hands ? The mechanical, unlovely and thoughtless work which is produced by those who are accounted " hands " is probably the Nemesis of this fallacy. For, treated as hands, the combined workmen of High Wycombe and Shoreditch cannot recover the fine design, grace, and perfection of workmanship of eighteenth century furniture even though the aim is only to copy it. The multitude of us see no difference between the imitations and the originals, and the highest praise our educated taste can give is reserved for the cleverness of the thing, *as a copy*.

I quote the phrases from the journal mainly to prove what seems to me to be an unfair appraisement of values in education. It is an evaluation so generally accepted as to pass without question even in the pleading of an advocate for a wider view.

It is sometimes urged as a remedy for the present low standard of the industrial arts that the general education of artists and craftsmen should be carried further, and that all of them should, say, take mathematics or science up to matriculation standard. It was necessary, and is still in some schools, for the boy or girl of artistic promise to take these subjects at their examinations up to the same standard as that required for those who offer these as their special subjects. (Some who offer Art instead of Mathematics and Science are allowed to do so because they cannot reach examination standard in these subjects, not because they excel in Art. They are expected to pass the examination with a lesson of one hour a week. However unfair this arrangement may seem it is honest in this, that those responsible for it would not have their pupils waste time on Art in which they themselves have found no profit or pleasure.) Though no one questions the value of mathematics and science, it is well to remember that the artists and fine craftsmen, who, as soon as we are born are straight our friends : whose work and influence are an invaluable part of our inheritance, had no science as we know it, little Latin and less Greek : that it is as valuable as education to be able to appreciate the work of Wren, Hawksmoor, Flaxman, Alfred Stevens, John Crome, Baskerville, as the work of many whose relatively insignificant poetry occurs in the second volume of the Golden Treasury, or other anthologies which are read and studied for present examinations. To the question, " Who was Turner ? " the answer should not be "A boy in the sixth form." That the place which Alfred Stevens, John Crome, and numberless others take in the annals of Art, Architecture, or the crafts, is due to a mere accident is not to the credit of systems of education. A present-day artist of widely acknowledged ability was brought to my predecessor by the head of his school, with apologies for passing on a boy who was nearly a lunatic.

It is well to remind ourselves that a work of Art (from the beauty of fine craftsmanship to an imaginative work by Michael Angelo), appeals direct to the æsthetic intelligence, and is independent of a knowledge of history, science or mathematics—its appeal is through feeling and not through calculation. Consequently, Art in education should deal largely with self-expression and appreciation. Our modern Art teaching began with, and still leans too much towards, narrow technical accomplishment —expression and imagination being subordinated to analysis.

It will not be said of William Morris, or of William de Morgan (to mention two whose work is well known) that they were lacking in general education. Yet the whole world did not supply a sufficient market to ensure the continuance of the Kelmscott Press, or even the continued weaving and printing of Morris's fabrics and wall-papers ; and William de Morgan's unquestionably beautiful pottery and tiles failed even more than Morris's printing to find admirers. The plea that if artists and craftsmen all went to college, ugly cities and " Brummagem " industries would improve, will not do. It is hardly half a truth. Art is not for the few who produce : it is for the many whose lives should include beauty, with truth and goodness. Higher general standards of appreciation and taste mean advance along many ways. People who know of better things demand better things. Thus Art teaching to all pupils in schools has a practical relation to the life and business of every community. This was forced upon me recently, during a visit to Zurich, where I could not help noticing the high level of taste shown almost everywhere in the goods offered for sale. Thinking that the teaching of their Art School might be the cause of this I went there to see, but found the school's work in no way remarkable. At their High School and University, however, there is striking evidence of a lively appreciation of amenities and of fine artistic taste, and there can be little doubt that the teaching given includes a knowledge of that which their school, university, public buildings, houses, and shops proclaim.

Contrariwise (and I am able to say this because I had nothing to do with it), some very beautiful silversmiths' work (to take one of Birmingham's main industries) has been made for many years at the Art and Crafts School there, and the men who have made it have gone into the industry. That the beautiful work, such as they might have done, is not seen in Birmingham's shops, or on the tables of the city's rich suburbs, is due, in my opinion, to the fact that employers, managers and buyers have not had their interest aroused in good work or beautiful craftsmanship of any kind. The education they had gave them insight and interest in things necessary to business management and the counting-house, but they brought to the factory no interest in fair and beautiful work. " Who was William Morris ? " a master printer asked me. Is it possible that a master engineer would need to ask, " Who was James Watt ? ".

In "A Passage to India," E. M. Forster writes :—" Their ignorance of the Arts was notable, and they lost no opportunity of proclaiming it to one another ; it was the public school attitude, flourishing more vigorously than it can yet hope to do in England. If Indians were shop, the Arts were bad form, and Ronny had repressed his mother when she enquired after his viola ; a viola was almost a demerit, and certainly not the sort of instrument one mentioned in public." Such public and grammar school men form the bulk of employers and governors in the art industries of this country. Efforts are made to increase their number while the old craftsmen are rapidly dying out. As directors and masters they are sadly out of place. Many of them feel so but cannot leave their businesses ; others, being frank with themselves, and knowing that they have no interest in making things, but only in making money, leave the industries where design, quality, beauty, are necessary, and take up some mass production, or factor's business. In this way public school education helps to change a nation's industries from "quality-work" to "quantity-work" ; from competition with nations of skilled craftsmen to competition with primitive and semi-developed peoples. Another aspect of this matter deserves notice and endorses the necessity for teaching the values of Art and workmanship to those who may be "captains of industry." Machines, semi-mechanical, and mass production employ many individuals in separate processes, where formerly a single craftsman was responsible. This division of labour makes good work difficult, and beautiful work well nigh impossible, for that grace of and joy in good workmanship, which is largely Art, can hardly be compassed in so impersonal a thing. Therefore it becomes absolutely necessary that there shall be a governing, creative intelligence, sympathetically related to all the workers, and one capable of making each enthusiastic about his share, as a part of the whole, if the whole is to be knit together with a common aim and artistry and the finished thing no more to be considered as separate parts than is the performance of a good orchestra. This captain must be a conductor. In "art industries" now it is as if the conductor's baton were put into the hands of one who had no knowledge of or sympathy with music. Yet in music, personality and individual artistry count for as much as in any of the industrial arts and crafts, and so are probably more difficult to bring to the harmonious unity which an orchestra gives us. Would that, in this sense, as in another, it could be said that "all Art aspires towards the condition of music." To dwell on this point, as it affects our prosperity as a nation which should make and supply the world with goods of the finest and most beautiful kinds, would lead away from consideration of problems of education.

Is it evidence to the same end that, as after-school-interests, I have rarely met an employer who had collected for personal use some beautiful examples of the craft he traded in, or studied for pleasure its finest standards and examples ? For their value as daily inspiration and refreshment it might be expected that a few reproductions of fine work, or actual things, would be found in their business offices, but such evidence of interest in masterpieces of craftsmanship is very rarely found. To judge from casual chance would be unfair, but I have never met a manufacturer of any branch of industrial art at the Victoria and Albert Museum, or at any of the craft museums of Europe. Very few of them visited the recent International Exhibition of Industrial Art at Paris.

It has been said that the best and readiest way to make a revision of values would be to see that all who passed through Teachers' Training Colleges had due appreciation of beauty and fine craftsmanship. But, given the student whose suitability for adequate training in art and craft is unquestionable, those familiar with Training College organization know that the difficulties, financial and other, prevent such education. Further, almost all those who pass from Teachers' Training Colleges go into elementary schools: very few go into secondary and grammar schools, where those are educated who become employers and directors and eventually govern quality, style and design in manufactures. The solution of the trouble does not lie with the Training Colleges but with the examinations in secondary and grammar schools which, having too much in view a University career for all, set courses and tests which shall train and select the few who go to a University. These examinations leave out the culture of such creative abilities and appreciations as would fructify Art and other industries. Partly as a consequence of this our furnishing trades and silversmiths have been parasites on the work of the eighteenth century for the last fifty years.

That a young woman has the foundation of good taste in Art and craftsmanship when she leaves school is more to her advantage generally than if she is skilled in mathematics, and I believe that the thing that would make most difference to our standards of Art as a nation is that Art teaching should be well done in secondary schools. Is not education in English mainly the reason for the very large sale of Dent's "Everyman" series and similar publications ? For what is the good of Art schools teaching what there is no intention of requiring ? A steady demand for good things will, as a matter of course, bring the necessary fine work. The artist and craftsman have always come forward where there is appreciation and reasonable recompense for their work. In the great times of Art power has had the wisdom to encourage it.

Art as a subject of equal value with other subjects has often been disputed, and a good deal of nonsense has been talked about soft options. We know, however, that there are few subjects which cannot be made an instrument for hard thinking, clear expression, and scholarly finish. And Art, through which a succession of some of the world's finest spirits have fulfilled themselves for twenty centuries, in work which is the expression of culture and civilization—a subject, too, which offers numberless ways for creative work, adventure and research—needs no apology for its place in a school time-table. But if its value as a part of education is to be equal with other subjects, it must receive the same treatment. A subject cannot be taken as far in one hour a week as another to which an hour a day is given. Drawing at its best is no more " mere finger skill " than is the playing of an artist-pianist. It is a question of content as well as of executive ability, and the simple efforts of children are in line with the work of masters if they are informed with sincere feeling. Some children's drawings inevitably recall the fine drawings by Holbein which are treasured at Windsor and Basle.

It seems inconsistent that we should give a good deal of care and attention to the appearance of our own houses and rooms, and give relatively little to class-rooms which, during impressionable years, are the environment for all young children. Therefore I believe it would be of more advantage to Art education if evidence of interest in beauty were obvious everywhere in school than that an extra quarter of an hour were added to the Art lessons.

When I am asked to wait in the head master's room and, sitting down, look round, I generally repeat to myself: "Abandon hope all ye who enter here, should your mission be the increase of beauty." If it could be decided as fairly, and on evidence as conclusive, that there was as little hope of finding truth and goodness, would it be necessary to send for the police? Of what use would training in truth and goodness be if the life of the school bore as little evidence of belief in them as its rooms and life reflect knowledge and love of beauty?

While remembering that much is already done to improve environment, I would press for the most generous consideration of the value of it as part of Art teaching. It is difficult to believe that two places like Darwen and St. Helens, however well equipped with professors, could give students all that Oxford and Cambridge give.

It is unnecessary to particularize as to what is included in environment. One thing, the class-room will serve as illustration of what may be done. According to its aspect, this may be painted a warm or cool colour. To paint a north room blue would be to make it look uninviting during the major part of the year, and, in spite of a thermometer registering 60 degrees, the room would seem cold. Rooms generally look fussy through many small things on their walls, or through many colours used in decoration and furniture. Odd patches caused by ventilators, corbels, roof timbers, and other fittings, should be painted the same colour as the wall or ceiling on which they occur: simplify the appearance wherever possible, avoid spottiness and unrelated patchiness: aim at breadth of effect. Almost certainly something which cannot be related to the structure or arrangement of the room must be brought in. Whatever simplicity may be achieved will be the better background for displaying the one bunch of flowers, or plant, or the *one* good picture, or other work of art we may be able to afford. The framed photographs of cricket and football teams are too small for the school hall where they are usually hung. In a small room, library, entrance lobby, landing or corridor, they might possibly look well if grouped together.

If there must needs be many small pictures, group them together. But association with *one* good thing, which shall be changed for another good thing every so often, will do more good, and look better, than a dozen poor things kept constantly for company. The pictures should be of as good a standard as the school's standard, say, in literature. At present this is very rarely so. A very pleasant and dignified room may be wholly without decoration of any kind.

Except for new schools, furniture and equipment are settled; all that can be done is to see that they are pleasantly finished, if they have to be repaired or renovated, and that the walls, their background, harmonize with them. For the dado a warm brown, analogous with the furniture in colour, will unify the lower part of the room with the fittings, and a lighter, warm tint above the dado will continue the scheme and help towards simplification. The colours should be clear and light rather than dark and dirty. We cannot afford to do without the reflecting power of white for the ceiling.

No good designer ever seems to be employed for school furniture and equipment. It rarely looks as if a first-class and well-trained intelligence had striven for that perfect economy of perfect means which we recognize in fine natural things.

By a division similar to that followed in English studies, Art work may be said to deal with three things: technique, creative work, and the study and appreciation of fine examples. All pupils can attain some ability in technique, and all should have profit and pleasure from acquaintance and with fine examples. Aptitude for creative work is usually there also if we take the trouble to find it. If it be not found—if it does not get its chance of expression—what is creative in the individual, and therefore priceless, is stunted, and the intelligence is inevitably in some degree deformed.

For each of these sections there should be a more generous provision of beautiful objects, and beautiful natural things, as examples for study—not "models" in the old-fashioned sense at all. These, while useful on occasion, should be kept out of sight. For the technical side of his work, but more particularly for that side which deals with appreciation, the teacher of Art should have an anthology, so to speak, of examples and reproductions from the study of which a cultivated judgment may be formed, æsthetic appreciation widened, and inspiration drawn for creative work. From such an anthology of reproductions, pictures of most of the world's masterpieces in Art could be brought before the school. These reproductions of fine things may be made to assist the study of scripture, geography, or history also, and through this correlation some pupils may develop artistic insight and appreciation which otherwise would have remained dormant. In a parallel fashion a library stands to the teacher of literature, and, in another way, a laboratory for science.

The teaching of Art and Handwork might be more closely allied with profit to both. On the one hand Art teaching would gain opportunities for creative work, and on the other Handwork would profit by interest in beauty and beautiful craftsmanship. These two, now separate subjects, if so allied, might help with difficult time-tables. When "manual work" is used only as a vehicle for teaching history or mathematics, it is robbed of some of its special value, namely, the opportunity which it gives for the impulse to creative work, and for that education in the values of good craftsmanship which comes through carrying Handwork up to a good standard.

Finally: is it a comment on the place which Art takes in education that we have a National Trust for the Protection and Preservation of Places of Natural Beauty, a Society for the Prevention of Abuses in Public Advertising, Civic Societies for the preservation and development of civic amenities, the National Art Collection Fund which saves for the nation a few of those beautiful things which would otherwise pass out of our possession? Ours has been called "The Age of Disfigurement."

A sense of the value of fine things, and that appreciation of civic amenities which begins when we drop our tram tickets in the box, and not as litter in the street, would make these societies for protection and preservation largely unnecessary. This sensitiveness to the value of beauty can be awakened and developed through school environment and teaching; its importance as Art education is probably greater than skill in drawing.

For some ideas and phrases in this address I am indebted to Professor W. R. Lethaby.—B. J. F.

Print-Script and Cursive-Script in Schools: An Investigation in Nervo-Muscular Re-adjustments.

By W. H. WINCH.

I.—The Problem Stated.

For some years past, influenced thereto by the pamphlet of the Board of Education on Print-Script and some observations on the relative speed of the two styles of writing in London schools, English schools have largely discarded the cursive-script, a roundish running hand-writing, which was formerly, in one or other of its forms, almost universally taught, and have adopted a form of writing which in large measure approximates to printing. It is taught almost exclusively in infants' schools; and, in some cases, throughout the whole of the child's school life in senior schools; in others giving place, at earlier or later stages, to the older forms of cursive-script; and in others, relatively very few in number, to a system of writing which may best be described as joined-up print-script. The essence, so to speak, of script-print is its formation letter by letter, and, indeed, of parts of letters, by separate nervo-muscular innervations or separate strokes. The essence of a cursive style is the attempt to run all the letters of one word together, and the completion of the whole word by what appears to be one nervo-muscular innervation.

Much discussion of the question ranged around two or three issues. On the one hand, it was argued that, in any system, little children must begin to write by making separate strokes as parts of letters; that is the only way they *can* begin, so why not adopt a system which openly recognizes this fact and allows for it? To this argument it was rejoined that children *can* be taught to write cursively one word at a time, and should be taught to do so from the first. This is an argument; as far as England is concerned, it is hardly, if at all, realized in fact. The second line of opposition is a stronger one: it is conceded that children must learn to write by separate strokes even for parts of letters; but that in a cursive style the letters (with serifs—lines of approach and termination) can be, and are, so constructed that they may be readily joined up in a continuous flow as one word, an argument which is abundantly realized in actual practice.

The next great issue was concerned with facility. Even those who were prepared to admit the beauty and clearness of print-script (the teachers were usually shown extremely good specimens) were strongly of opinion that it was slow. Taking the pen off so many times during the writing of the word *must*, they said, give us a slower form of writing: writing is no longer the luxury of a few craftsmen in a leisurely age, it is a necessity for us all; if it is legible and facile, that is all that is, or ought to be, required. Let us grant that legibility and facility are the principal *desiderata*. The early stages of print-script are certainly very legible; but, according to a report of the examiners for junior county scholarships in London, print-script becomes very difficult to read when " pace " is put on (as it must be) for the completion of the English paper set in this examination. The examiners overlooked the fact that they themselves were " brought up," so to speak, on cursive-script, and could hardly be expected to read a new style at their old pace, unless, of course, the new style was much more legible. Speaking as an inspector who must of necessity see, twice a year, the preliminary scholarship papers of a whole administrative district in London, some papers in print-script, some in cursive-script, I have not been able to form a satisfactory judgment on this issue. The children in some schools write very legibly, whether in print-script or cursive-script : in others they do not. Observations and experiments would have to be undertaken *ad hoc*, under equal conditions, to decide that issue. So I shall leave it just now.

Then, as to facility, infants' teachers are fairly unanimous that print-script is easier for very young children to learn than cursive-script. I give the argument for what it is worth. I am at present engaged in " trying out " the two styles under exact experimental conditions with the aid of an infants' mistress who is very experienced in experimental work, and with children who have hitherto learnt no writing at all ; but it is too early yet to come to any clear decision on this question.

And head teachers of senior schools state that there are children who cannot learn to write decently who can learn to print quite well. Maybe the reverse is true ; but on that there is no evidence.

Supporting the argument as to the greater facility of print-script, there is the well-known fact that with adults suffering much from fatigue or from certain nervous diseases of dissociation, the letters of their written words become jerky and disconnected ; improved health restores a flowing style.

As against the above considerations, we have the weighty testimony of C. S. Myers to the following effect, that " one of the broad principles of movement study now becoming recognized is to avoid a sudden stop of momentum wherever possible. The movement should be continuous in the form of a curve. In a coal mine, for example, it was found by the National Institute of Industrial Psychology that when the up and down swing of the miner's pick was replaced by a smooth curved swing—an operation which apparently took a shade longer to perform—the general output was considerably increased and energy was saved." On this I merely comment that the work to which Myers refers was done with adults, not with children. It may well be that staccato movements for the very young may be easier at first, though, later on, the combination of these movements into more continuous and more curvilinear ones may be found easier than the more rectilinear and shorter strokes from which they are developed and out of which they are compounded. Moreover, there is necessary in learning to write letters and words, the perception and imitation of " standard forms " which may require a preliminary analysis and presentment in parts which are more difficult of apprehension than the strokes of the miner's pick, apart from the nervo-muscular adaptation required in imitation. And, of course, the force of the impact of the blow is a relevant consideration in mining, though not in writing. So much at present for considerations as to facility apart from speed, if we may so consider it.

Now as to the question of speed. The argument against print-script which carried most weight was that to lift the pen from the paper at the end of every letter or part of a letter *must* result in a longer time being taken to write the whole word than if the pen were not taken off the paper from the beginning of the word to the end. To this it may be replied that movement along paper involves more friction, and hence more retardation than movement through air: and that "feathering" when sculling implies a slower movement on the whole than lifting the sculls wholly from the water and putting them in again. Moreover, Ballard refers to some American work (I do not know the reference) which goes to show that lifting the pen would *not* cause a diminution of speed.

And, even supposing that we had a complete psychological analysis of all the movements required in writing, and the ease and speed of each movement had been determined, we should still have to put them into practice in synthesized combinations before we could obtain real guidance. For the combination and sum (if we may so call it) of any set of analysed mental functions cannot really be determined with any certainty from its analysed constituents—the new activity is something more (and probably something less) than its constituents as shown by analysis. I say this with no desire whatever to belittle analytical work in psychology; far from it. For we can attack all our psychological problems more effectively when we have analysed them thoroughly. I wish merely to urge that a final decision cannot be attained without a synthesized combination in actual life. We may find, to use a somewhat parallel case, bacillus and virus, but we must produce certain results when bacillus and virus are working within living human beings before we have finished our task.

Considerations such as these, indeed, it was the obvious method to inspectors and school masters, induced observers just to try whether, in a number of schools, print-script could, at varying ages, be written as fast as cursive-script. And if the results from each school had been given separately, with the relevant conditions clearly stated, the work would have been much enhanced in value. For there are many difficulties. Here is a class with a teacher who is much concerned with rapid mechanical work of all kinds; his boys will have a high *tempo*, so to speak. The boys pass from him to a man, quite as good a teacher, who is slower, perhaps more thoughtful, perhaps not, but the *tempo* of whose work is slower. It is common knowledge that the pace of the boys' work will decline. Suppose the former teacher teaches cursive-script and the latter print-script, can we say that cursive-script, as such, is faster? Hardly; since we have a factor, quite outside the style of writing adopted, which is vitally influencing the result.

Or we may have a teacher much more concerned with what he calls "good" writing than "fast" writing, and another with the reverse inclination. Suppose the former teaches print-script and the latter cursive-script, shall we say that print-script, as such, is slower?

Or we may have a class of boys passing from lower classes in which they have been taught by relatively weak, young, and inexperienced teachers, to a higher class under a man, thoroughly experienced, in the prime of life and vigour, who exacts a high standard of effort and speed in all the work done by his boys. The boys under their former teacher learnt print-script; under the latter they are taught cursive-script. Shall we say that because their cursive work becomes very rapidly faster than the other that the cursive is the more rapid style? No teacher would admit the validity of such an argument.

Or, to take another relevant issue, are all schools so much alike in the natural ability of their children that it is a matter of indifference, provided we take equal age-groups (standards are hardly admissible in this connection), which children are tested in print-script and which in cursive-script?

It is fairly certain that children in "poor" schools (*i.e.*, those in poor neighbourhoods) do not differ so much in mechanical proclivities from those in good neighbourhoods as in more intellectual aptitudes; but still they differ, and for the worse. A "poor" school writes print-script; a well-situated one writes cursive-script. If the print-script is slower, is that because it is a slower style, or because of the natural inferiority of the children?

But suppose we test in schools, equally well-situated, with teachers whom we believe to be equally competent, and equally inclined to put "pace" into the mechanical work, and we test complete age-groups in all cases, are we then out of our observational difficulties? Hardly, for one school may do more written work in school than another, or more written home lessons than another.

Yes, but if we cast the net widely enough, it is rejoined, we are just as likely, by mere chance, to get a number of schools of equal class with equal teachers and equal amounts of written work on one side as on the other. Well, if we are, and the mean differences between the averages of our results are twice or more their own "probable errors," we have a basis, and a good basis, of comparison.

There may be such cases; I say there may be—I hardly think there are—in which, as in arithmetic done by boys and girls, side by side in mixed schools, such a method might be valid.

But for print-script and cursive-script the method will hardly apply; for we are not likely to find schools doing the one and schools doing the other equal in other relevant conditions. Choice in these matters rests, in England, with the head teachers of the schools; and though the English Board of Education announces quite distinctly that their choice must be respected, there is much suggestive force in pamphlets issued by the Board (as there should be) and much influence in such matters is wielded by inspectors, whether of the Board or of Local Education Authorities. And print-script is, or was, a new thing.

Head teachers vary much in their attitude to what is new. If it is influentially recommended, there are many progressive and very competent teachers who will take it up, and do it well, whatever it is. There are others, sometimes called the "old stalwarts" (mostly very efficient and very conservative), who distrust it because it is new, and because they are satisfied with what they are doing already. And others, I regret to say, take it up because they wish to be thought in the coming fashion. And there are others, very reasonably, who say to themselves: "The writing in my school is pretty bad; I shall give this new style a chance. It can't be much worse than it is now, and I expect it will be better." It may be that these conflicting considerations will give us a fairly equal number of highly efficient teachers, one body ranged in the one camp and one in the other; but I leave it to teachers themselves to estimate whether this is likely. And if it is not likely, or doubtful, the method of broadcast testing will fail.

I am going to conclude then that we have no body of evidence at present as to the relative facility or speed of print-script versus cursive-script collected under equal conditions, or which has passed the necessary statistical tests. And I am going further. I assert that it would be of little practical value if we had. For, curiously enough, after so much argument has been spent upon it, that is not the actual problem. For very few schools now teach unjoined print-script throughout all classes, though it was not uncommon at first. The Board of Education pamphlet on print-script does *not* recommend unjoined print-script as an end in itself; but as a preparation for a cursive style. This fact and social pressure have induced the vast majority of head teachers to have writing taught to the children before they leave school. And the vast majority of these head teachers discontinue the print-script in writing lessons, and commence a new and cursive hand; sometimes beginning this new style as soon as the child leaves the infant school, at about the average age of 7¾ years, and sometimes commencing as late as Standards VI and VII, in approximately the closing years, 12 and 13, of elementary school life. They are apt to overlook the possibility of joining up the unjoined print-script itself, and, when they do not *overlook* it, assert that it will not join easily, or that, if it will, it does not result in a cursive or running hand. Clearly, therefore, we have two possibilities, either to replace unjoined print-script by a cursive hand, or to have a joined modification of print-script in the later years of school life. One or the other is finally inevitable. This, then, is the question to which we must address ourselves.

From our general experience of sport and games we believe that if one kind of " stance " or " stroke " is adopted in the earlier stages of play it is very difficult, if not impossible, to acquire adequately another set of nervo-muscular adjustments at a later age, and we are all conversant with dicta like the following: " So-and-so will never be any good at that game; he began too late, and he began wrong." The implied arguments are that one must begin as one means to go on, and *must* begin young, whilst the nervo-muscular system is very plastic. I take the above illustration from the world of sport, in which Anglo-Saxons are really interested. It would be conceded that there is some loss of facility in changing from one set of movements to another even in very early life, but in the case of the change from print-script to cursive-script, it is argued that it is small, and that if there is " interference," to use the psychological term, there is also " transfer." And, further, that the loss is very, very small, if a change from print-script is made, not to a really cursive or running hand, but to a form of writing in which the unjoined letters, or some of them, are joined up within the words. *A priori*, I think we can hardly be sure about that. The question really is whether we can change more easily from one set of movements to another set rather seriously different, or to one in which we pursue our old lines with slight additions or modifications. I am inclined to think that common sense would decide in favour of the former (I am not at all sure whether correctly or not), and it is by no means an uncommon procedure for experienced head teachers, dissatisfied with the hand-writing of their schools, and despairing of ever putting right an old style which has fallen to pieces, to adopt a new one, rather markedly different; for it is easier, they assert, to make a big change than a little one. And common-sense would say that we must make our changes, if we are going to make them at all, as early as possible; and then, going further, would ask the question: "Why not *begin* with that style of writing (a set of nervo-muscular adjustments) which we intend to attain later on and finally?" To the latter argument the answers are two. First, that print-script is much easier in the early stages (I am not yet sure as to this); and, secondly, that writing does not stand alone; it should be used to help the reading at the ages, at least, of five and six years: that print-script does this, cursive-script does not. I have experimental evidence that two styles of making letters in the early stages of learning to read *does* result in some interference; and, if very early reading is desirable (just now, in England, we think it is), it would be well to use one form of letters for both writing and reading. It might, of course, well be real print (the print of the printed book), or phono-script, or other form of modified print by means of which the young child is learning to read. We should, of course, still have the problem of change before us—When, and with what loss, and with what duration of loss?

There is just one word before I set out to describe some rather protracted attempts to settle some of the above issues by experimental methods. I have said nothing as to the relative beauty of print-script (joined and unjoined) and cursive-script, ordinarily called writing. This issue will remain, at least until we are much further advanced in our knowledge of the psychology of beauty than we are at present, a matter for individual judgment. All I am inclined to say is that I have seen beautiful script and beautiful writing, both of them with considerable individual character, in the closing year of a child's elementary school life. But, as I have indicated, the issue will not, I think, be fought out on the lines of beauty; granting adequate legibility, it will be fought out on the lines of facility and speed. I turn now to the experimental evidence.

II.—A First Experiment: School A. Boys.

i.—The Children who did the work.

A first experiment was carried out in a municipal boys' school in Stepney; a long-established school attended by Christian and Jewish children in equal numbers, under an experienced and strong head master. It was the pioneer school in the East End as far as print-script was concerned. The head master began to teach this style of writing, namely, unjoined print-script, in 1913, and for some years taught nothing else in any of his classes. For the last seven or eight years, however, in consequence of social pressure in favour of cursive writing, he had taught a cursive style in his first class (Standard VII), which was not a development of print-script, but a new style. But even in this class he kept the unjoined print-script alive by using it in all arithmetic papers, and, of course, in map drawing. The head master and an assistant master volunteered very willingly to help me to find out what would happen if we commenced the cursive style in Standard V, about three years, instead of one year, before the close of the elementary school course. The tests began in March, 1922, and finished in February, 1925, in an experiment lasting three years. Our first step in this case was to obtain an adequate measure of the facility with which print-script was written before the teaching of cursive-script began. For this purpose four preliminary tests were given in print-script ; the exact chronology of the whole experiment will be given later. Then cursive-script was taught, and at certain intervals during the three years, tests were given in print-script and cursive-script; and this was continued until, either by entrance into central schools, or by means of scholarships to secondary schools, or by exemption from school by age or removal to another district, the thirty-nine boys with whom we started were reduced to ten, and most of these were leaving school in the April following the February in which the experiment terminated.

ii.—The Tests and the Method of Marking Them.

The boys were told to write as much as they could, having due regard to the formation of their letters. They were required to transcribe passages in a reading book with which they were not acquainted. All tests were given from 9 to 9-15 a.m., the exact time (15 minutes) being carefully checked off by the head master and the assistant by means of two watches each provided with a seconds hand. The teachers were careful to choose passages of corresponding difficulty in meaning and wording ; and as a check on mere estimation, the words in about 20 lines of print were counted, and only slight differences found in their number. In marking the papers, one mark was given for the number of separate *words* that were written in the 15 minutes. But this number was subject to deductions, for it was obviously of little use to regard these exercises as lessons in which mere scribble could be written and accepted. The first deduction was concerned with words wrongly copied or wrongly inserted : the second deduction was made for errors in letters and illegibility. An erroneous letter was one which was not made according to the scheme of printing (or, later on, writing) which had been taught, and an illegible letter was one which could not be distinguished as the particular letter when the rest of the word was carefully covered.

After the four preliminary tests in print-script had been given—there was the usual steady rise from first to last—the teacher of the class began to teach cursive-script : he gave three lessons per week of 30 minutes each in length in which the formation and joinings of the letters were dealt with. Thence onwards, the boys were required to do all their written work in cursive-script, with the exception of the headings in their arithmetic papers, the wording involved in stating the answers to their sums, the necessary statements involved in their problems (which ought to, but did not amount to much in actual practice), and the printing required in map-drawing, of which there was one lesson a fortnight. The importance of this matter for our research is that the old movements are kept in being, and not allowed to decay as much as they would have done by mere desuetude. The first comparative tests on May 10th and May 11th, 1922, in print-script and cursive-script respectively, after the latter had been in progress for some six weeks, showed an average of 145 words correctly written in print-script and of only 96 in cursive-script, and errors in the cursive-script were rather numerous. Consequently, for two more weeks, three lessons a week were again given in cursive-script, and two further comparative tests set on June 21st and 22nd. The print score was much as before, namely, 144.9 correct words in 15 minutes, and the cursive-script 114.4. No more definite lessons in cursive-script were given, but any letter wrongly formed or incorrectly joined was corrected individually in the boys' ordinary written exercises, whilst fairly general errors were set right on the blackboard. Two more tests were given just before the summer holidays of 1922, in print-script on July 19th, and in cursive-script on July 20th. It may have been noted that the tests, given on consecutive and middle days of the week (never on Monday), alternated, print-script being given first one week, and then, for the next pair of tests, cursive-script being given first. The print-script average this time was 157.8, and the cursive-script 115.6 correct words in 15 minutes. It was noticed, during this test in cursive-script, that the boys were dipping their pens in the ink somewhat more than usual, and there seemed some shortage of ink in the inkwells. Care was taken to obviate this difficulty in all future tests. Now followed the summer holidays, rather more than four weeks, and, a fortnight after the school had re-assembled, a new form of test was given which we called a beauty test. One half the class printed about six lines from their reading books, whilst one-half did cursive-script ; then the first half wrote cursive-script, whilst the second half did print-script. Of course, the boys now understood that they were to write as well as they could, not as fast as they could consistently with good writing. Both the print-script and cursive-script written in this test were of a very high order indeed. Only two points of interest were noted. First, that the cursive-script was perceptibly larger in this school than the print-script (it was, of course, a new style), and that fact assisted to make it relatively slower. Secondly, that in the immediate passage from the one form of writing to the other in the middle of the test, there was some inconvenience noticed. It will be remembered that the boys had now been writing cursive-script for about six months. The next speed tests took place on September 13th and 14th, cursive-script being done first. The results were, for print-script, 160.6, for cursive-script 131. About this time the head master took a vote from the boys as to which form of writing they preferred, and it was an unanimous vote in favour of cursive-script. He was rather distressed at this, since print-script was a hobby of his own, and had been taught successfully for so long a period at this school. But he was reassured when I told him that the vote indicated nothing except the pleasure of novelty, and that precisely the contrary result would occur (as, indeed, it did), if boys who had hitherto learnt cursive-script were then taught to print. Preferences of this sort mean nothing of importance unless there is equal experience, and equally stressed experience, of the activities to be compared.

Further tests, which were given at intervals until February, 1925, will not be referred to here ; they will be shown in the chronology of the experiment, and the marks obtained will be shown in one table. A few observations made by the teacher who selected the tests and marked the papers are of interest. At the seventh pair of speed tests passages from a harder reading book were selected (the boys were progressing through their "standards," be it remembered), and there was, of course, a fall in the number of words correctly written in both tests. In the earlier tests many incorrect and illegible letters appeared in the cursive-script ; but there was a marked decrease as the tests proceeded; meanwhile, such errors increased in print-script, and became considerable towards the close of the experimental period. It will be remembered that no word in which one or more literal errors were made was counted as correct. As to the beauty tests, of which there were five in all, the teachers were convinced that the boys were quite conversant (when written slowly) with their new style. It was, certainly, first-rate writing, all the better, probably, as far as legibility and " copperplate " beauty were concerned, from having been recently acquired. I will now set forth the chronology of the whole experiment.

iii.—Chronology of the Experiment.

First preliminary speed test in print-script	15th	March,	1922,	9 to 9-15 a.m.
Second ,, ,, ,, ,,	17th	,,	,,	,,
Third ,, ,, ,, ,,	21st	,,	,,	,,
Fourth ,, ,, ,, ,,	23rd	,,	,,	,,
Cursive-script began to be taught	27th	March.		
First speed test in print-script	10th	May,	1922,	,,
First ,, ,, cursive-script	11th	,,	,,	,,
Second ,, ,, cursive-script	21st	June,	,,	,,
Second ,, ,, print-script	22nd	,,	,,	,,
Third ,, ,, print-script	19th	July,	,,	,,
Third ,, ,, cursive-script	20th	,,	,,	,,
First beauty test in print and cursive-script	5th	Sept.,	,,	,,
Fourth speed test in cursive-script	13th	,,	,,	,,
Fourth ,, ,, print-script	14th	,,	,,	,,
Fifth ,, ,, print-script	31st	Jan.,	1923,	,,
Fifth ,, ,, cursive-script	1st	Feb.,	,,	,,
Second beauty test in print and cursive script	13th	,,	,,	,,
Sixth speed test in cursive-script	24th	April,	,,	,,
Sixth ,, ,, print-script	25th	,,	,,	,,
Seventh ,, ,, print-script	3rd	July,	,,	,,
Seventh ,, ,, cursive-script	4th	,,	,,	,,
Third beauty test in print and cursive-script	6th	,,	,,	,,
Eighth speed test in cursive-script	23rd	Oct.,	,,	,,
Eighth ,, ,, print-script	24th	,,	,,	,,
Ninth ,, ,, print-script	27th	Feb.,	1924,	,,
Ninth ,, ,, cursive-script	28th	,,	,,	,,
Tenth ,, ,, cursive-script	12th	June,	,,	,,
Tenth ,, ,, print-script	13th	,,	,,	,,
Fourth beauty test in print and cursive script	14th	,,	,,	,,
Fifth ,, ,, ,, ,, ,,	1st & 2nd	July	,,	,,
Eleventh speed test in print-script	22nd	Oct.,	,,	,,
Eleventh ,, ,, cursive-script	23rd	,,	,,	,,
Twelfth ,, ,, print-script	17th	Feb.,	1925,	,,
Twelfth ,, ,, cursive-script	18th	,,	,,	,,

iv.—Results of the Experiment.

The individual results will be set forth in one table which follows; the work is tabulated for every boy who did the preliminary tests in print-script in March, 1922. Four of these did not go forward with their teacher to a higher class after Easter, 1922, and, of course, other boys entered the class at various times during the three years; they did the tests, but their work is not tabulated. A subsidiary interest attaches to the table, insomuch as we can see from it what becomes of an ordinary class of Standard V boys as they progress through Standard VI and Standard VII, the closing years of elementary school life.

TABLE I, SHOWING THE RESULTS COMPARED OF THE SAME BOYS WRITING PRINT AND CURSIVE-SCRIPT IN SCHOOL A DURING THE YEARS 1922-25. THE NUMBERS ARE THE "CORRECT" WORDS TRANSCRIBED IN 15 MINUTES.

Names of Boys (initials only).	Marks for Four Preliminary Tests in Print-Script.				Marks for Comparative Tests in Print-Script.												Marks for Comparative Tests in Cursive-Script.											
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th
H.G.	219	241	229	211	187	182	198	216	194	250	177	198					102	131	136	153	154	201	178	169				
B.D.	212	223	206	213	167	177	184	177	191		Cent	ral S	chool				103	142	130	148	136		Cent	ral Sc	hool			
R.J.	209	210	194	210	*a*	199	189	200	216	239	198	253	234	250	230	260	*a*	170	198	198	159	174	203	221	199	230	216	230
G.H.	206	205	189	200	177	*a*	168	191	172								*a*	115	87	140	147							
L.S.	201	179	219	220	200	200	171	177	177	214	179	239	229	238	221	217	128	121	109	118	138	199	183	179	221	228	241	208
G.A.	187	192	179	208	156	169	199	177	173	217	185	182	*a*	228	211	235	110	120	135	139	128	177	*a*	170	*a*	195	198	227
B.H.	182	162	171	173	144	142	148	*a*	*a*	172	153	181					92	102	108	*a*	*a*	167	131	151				
W.F.	181	168	185	177	139	143	168	158	176	201	165	158	210	199	180	176	*a*	117	125	146	147	167	160	131	149	157	128	167
M.R.	170	174	171	184	153	150	174	154	177		Cent	ral S	chool				83	119	126	143	130		Cent	ral Sc	hool			
R.W.	169	184	171	196	184	164	184	178	194	224	191	230	255				138	126	135	167	169	198	179	196	223			
L.R.	168	174	191	175	158	162	153	152									123	*a*	132	133								
C.J.	167	170	159	163																								
P.A.	165	162	*a*	202	159	169	159	Juni	or Co	unty	Schol	arship					136	145	*a*		Juni	or Co	unty	Schol	arship			
G.J.	163	149	155	159	155	162	179	197	197		Cent	ral Sc	hool				99	138	140	156	167		Centr	al Sc	hool			
S.S.	162	137	161	171	146	128	136	137	155	150	123	152	*a*	191	183	190	121	124	119	129	132	144	135	155	172	192	170	177
J.A.	158	181	189	184																								
F.L.	157	116	143	146	125	140	141	152	156	171	151	174	157				63	92	88	101	113	139	126	135	144			
G.S.	155	162	193	188	147	123	162	151	144	179	122	*a*	186	196	180	173	90	87	105	127	113	136	114	*a*	187	183	182	125
L.R.	150	173	179	216	149	150	156	161	183	173	183	180	*a*				88	102	101	119	119	129	132	155	143			
J.P.	145	168	158	183	162	159	183	192	216		Cent	ral Sc	hool				96	119	142	160	161		Cent	ral Sc	hool			
L.S.	145	139	160	179	*a*	132	147	156	111	191							*a*	100	100	128	125	167						
A.E.	144	113	143	132	107	94	113	114	134	147	119	132	*a*	158	165	*a*	53	71	72	75	99	115	108	115	*a*	121	139	*a*
L.A.	144	170	169	193	167	158	171	161	165	192	159	175	210				117	141	152	156	118	156	137	176	*a*			
W.L.	143	177	147	157	157	142	176	167	161	165	129	157	182	170	187	164	127	113	121	128	154	170	153	163	192	181	171	189
K.S.	140	141	181	169	142	147	160	165	170	219	171	Juni	or Co	unty	Schol	'ship	95	94	*a*	118	138	168	145	Juni	or Co	unty	Schol	'ship
M.A.	139	158	167	195	162	168	152	177	189		Cent	ral Sc	hool				133	125	123	162	158			Cent	ral Sc	hool		
H.G.	137	135	122	146	117	106	116	116	143	157	110	130	152	154	129	*a*	54	75	54	74	*a*	124	93	112	145	124	102	*a*
C.F.	135	126	138	*a*	116	113	*a*	134	131	163	143	165	192	141	144	*a*	65	89	*a*	96	*a*	131	106	145	177	148	161	*a*
K.J.	128	112	141	176	167	168	186	190	212	243	200	Juni	or Co	unty	Schol	'ship	108	163	148	169	181	218	192	Juni	or Co	unty	Schol	'ship
C.L.	125	121	133	140	107	103	113	117									65	72	66	99								
*G.J.	122	184	169	186	159	173	205	210	193	257	224	Juni	or Co	unty	Schol	'ship	142	181	194	198	178	243	206	Juni	or Co	unty	Schol	'ship
L.J.	118	161	128	127	116	130	145	154	116	178	127	159	186	192	172	180	62	*a*	100	100	92	140	125	135	182	171	175	143
C.H.	116	144	150	155	138	118	150	156	181	230	180	Juni	or Co	unty	Schol	'ship	105	126	114	147	155	202	137	Juni	or Co	unty	Schol	'ship
P.A.	115	108	107	123	95	88	98	103	*a*	109	90	106	142	166	156	135	50	66	69	92	*a*	121	93	107	139	130	128	125
R.A.	113	148	144	166	108	129	128	133	131								57	87	76	93	96							
T.J.	110	114	115	131	110	109	125	142	135	*a*	136	138	163	158	182	189	55	68	64	83	105	*a*	124	125	138	139	159	159
P.W.	109	126	128	130																								
*P.H.	108	138	153	172	124	132	129	136	132	*a*	134	148	*a*	171	*a*		122	145	131	135	*a*	*a*	134	154	*a*	191	173	
J.W.	104	126	135	152	133												98											
B.W.	70	79	92	87																								
Averages to nearest unit ...	150	156	161	172	145	145	158	161	168	193	156	171	192	187	180	192	96	115	116	131	137	165	143	152	172	171	167	175

EXPLANATORY NOTES.

(1) *G.J. and *P.H. had already written some cursive-script at a previous school.
(2) C.J., J.A., P.W., and B.W. did not go forward into Standard V from Standard IV, hence their work in connection with the experiment ceased after the preliminary tests in print-script.
(3) *a*—Wherever it occurs means absent on the occasion of the particular test.
(4) The words "Central School" and "Junior County Scholarship" mean that the boy was continuing his education at a higher educational institution.
(5) No recorded mark in all other cases means that the boy had left the school either through exemption by age or removal.

COMMENTS ON TABLE I.—It is suggested that the marks recorded in the table should be studied side by side with the chronological account previously given. The great drop in the seventh test in both print and cursive-scrip is explained by the use of a harder book for transcription with longer words. The relative increases from one test to another should be considered in relation to the time elapsing between them

Ten boys, who were leaving at or near Easter, 1925, worked the final pair of tests on the 17th and 18th of February. As an illustration of the steadiness of the figures, I set, side by side, the figures for their first print-script preliminary test, given three years before, and those for their last tests in print-script and cursive-script, showing the marks to the nearest ten.

TABLE II.—SHOWING THE RESULTS OF THE FIRST PRELIMINARY AND FINAL TESTS COMPARED.

NAME (initials only).	First Preliminary Test in Print-Script.	Final Test in Print-Script.	Final Test in Cursive-Script.
R.J.	21	26	23
L.S.	20	22	21
G.A.	19	24	23
W.F.	18	18	17
S.S.	16	18	18
G.S.	16	17	19
W.L.	14	16	19
L.J.	12	18	14
P.A.	12	14	13
T.J.	11	19	16
Averages to nearest unit	16	19	18

The " r " coefficient between and first and final test in print-script is .758, the difference between the means is 3.3, and its p.e. is .509. The " r " coefficient between the first and final test in cursive-script is .84, the difference between the means is 2.4, and its p.e. is .382.

The " r " coefficient between the final tests in print-script and cursive-script is .809 ; the difference between the means is .9, with a p.e. of that difference amounting to .436. All the differences, therefore, are statistically significant.

v.—Conclusions from the First Experiment: School A. Boys.

After having been taught cursive-script for three years, begun just previous to entry in Standard V, whilst print-script is kept alive by use in arithmetic, map drawing, and speed tests from time to time, these boys have now approximated in facility for cursive-script to their present record for print-script ; they have approximated to it, but have not reached it.

We do *not* know what their final records in print-script would have been had their style of writing *not* been changed ; but we are certain they would have been higher than at present.

We do *not* know what their final records in cursive-script would have been had the boys been taught cursive-script throughout the whole of their school lives ; we are certain that it would have been higher than at present.

These boys take about one year and four months after cursive-script begins before they equal in facility their own preliminary print-script record, and some ten months before their print-script equals the preliminary records in print-script.

It is impossible to resist the conclusion that serious loss in facility has occurred through a change of style as late as Standard V. (approximate average age, 10 years 10 months.)

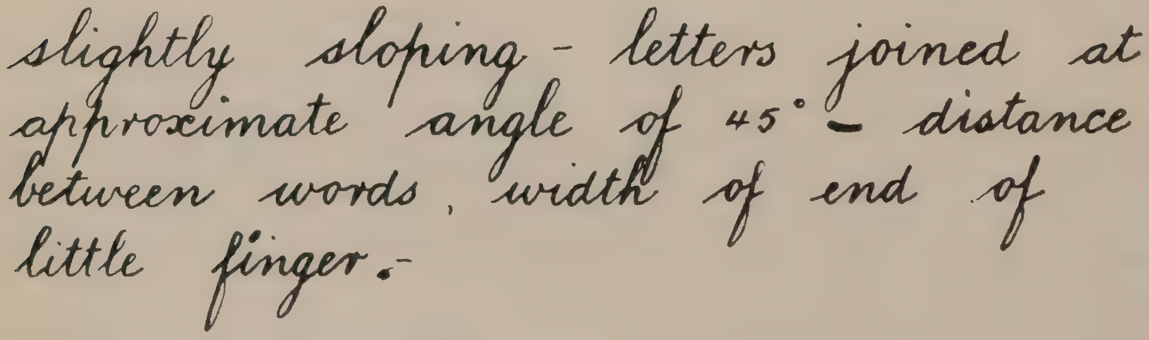
III.—A SECOND EXPERIMENT: SCHOOL B (BOYS).

i.—The Boys who did the work.

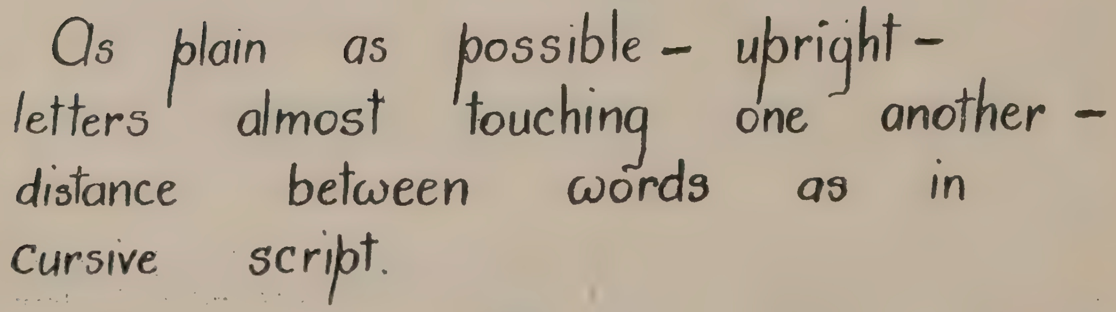
The second experiment here described was carried out in a small Ward school in the City of London. There are only two classes in this school, the first consisting of Standards VII, VI and V, taught by the head master, and the second of Standards IV, III and II, taught by an assistant master. The Standard I class is in the infants' department, and is not under the control of the head master of the boys' school. The boys are of a rather good social type, thought not equal to the inhabitants of the good residential suburbs which surround London. The interest attaching to this experiment lies in the fact that we have here a school in which, until very recently, no print-script had ever been taught. And we have, under one teacher, three grades or standards, two of which have never learnt any print-script at all. The writing hitherto taught to these boys is a cursive-script of what used to be called a Civil Service style. Now, for experimental purposees, we are going to teach print-script, though not entirely to discontinue cursive-script during the process. Shall we, or shall we not, find a loss and dislocation in this case, with a slow readjustment, as in the former school experimentally dealt with? Our boys are mostly younger, in two of the three grades under the same teacher much younger. How far will that fact affect our results?

ii.—The teaching of print-script and the testing of the two styles.

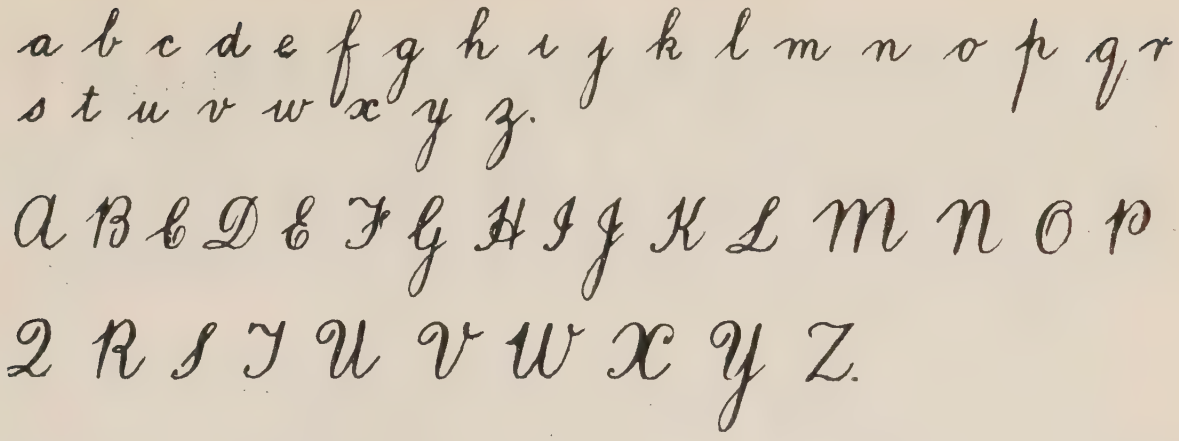
Following is a description, with specimens, of the two styles of writing as given by the teacher who conducted the experiment. The cursive-script had been taught; the print-script was about to be taught. No stress is laid upon the particular forms of print or cursive-script; they are merely given in illustration.

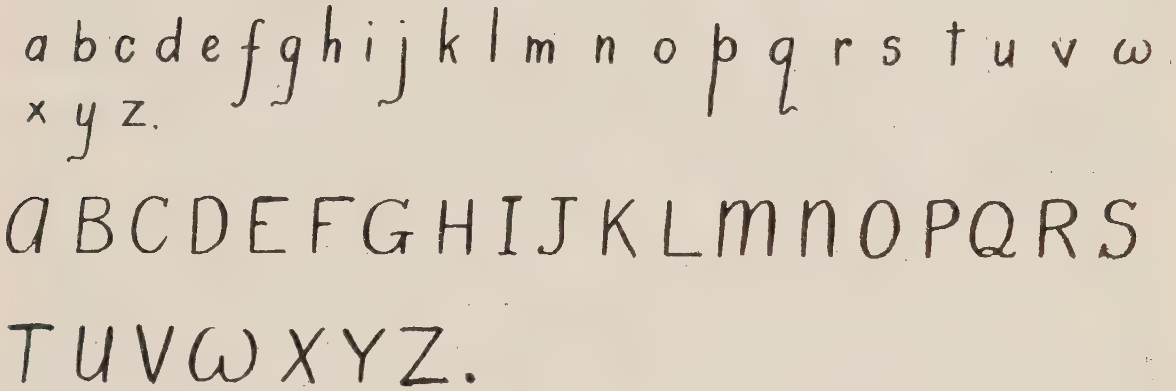


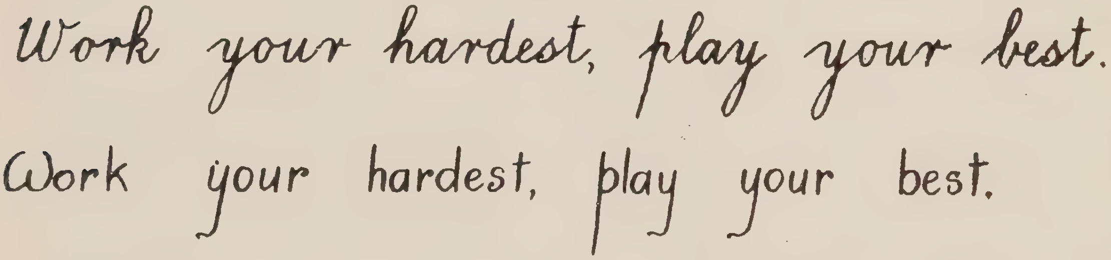
slightly sloping - letters joined at
approximate angle of 45° - distance
between words, width of end of
little finger.-



As plain as possible - upright -
letters almost touching one another -
distance between words as in
cursive script.


a b c d e f g h i j k l m n o p q r
s t u v w x y z.
A B C D E F G H I J K L M N O P
Q R S T U V W X Y Z.


a b c d e f g h i j k l m n o p q r s t u v w
x y z.
A B C D E F G H I J K L M N O P Q R S
T U V W X Y Z.


Work your hardest, play your best.
Work your hardest, play your best.

The teaching of print-script began on December 15th, 1924. There were two lessons in handwriting per week of 30 minutes each in the school time-table: these were now occupied in the teaching of the new style of writing; but it was necessary also, especially in the early stages, to take extra lessons, usually about two a week, which were ordinarily devoted to other subjests of school instruction. The extra lessons did not, however, prove necessary beyond about the middle of the ensuing March. One lesson a week, either one in handwriting or in English written composition or dictation, was done in cursive-script; *all* other work being done in print-script. Two or three months after print-script had begun, the boys voted unanimously in favour of the novelty. The speed tests began on the 3rd of April, 1925, and, as in the previous experiment, were transcriptions from passages in a reading book chosen to be as nearly equal in difficulty as possible. The speed-tests were intended to be of 15 minutes' duration each on successive mornings, but owing to a misunderstanding the first pair were given on the same morning with a 35 minutes' interval between them, and for only ten minutes each. No "scribble" was accepted; marks were subtracted for every spelling error, the omission of words or the interpolation of words, and every letter which was made out of accordance with the style in which the boy was working. *e.g.*, a print letter in cursive or a cursive letter in print, and every badly-formed letter, *e.g.*, "f" for "f" or "d" for "d" "s" for "s" or "u" for "a" was crossed out, and words which contained one or more of such letters were not counted. The marks left standing, as it were, were those only for correct words correctly written. The standard of accuracy, perhaps, was rather higher than that adopted in the previous experiment.

iii.—Chronology of the Second Experiment.

Print-script begun on 15th December, 1924.

First speed test in print-script	3rd April 1925	10-15 to 10-25 a.m.
First ,, ,, cursive-script	3rd ,, ,,	11. 0 to 11-10 a.m.
Second ,, ,, ,, ,, ...	29th ,, ,,	9-10 to 9-25 a.m.
Second ,, ,, print-script	30th ,, ,,	9-10 to 9-25 a.m.

No further tests could be given to this class as a whole, for Standard IV was now passing into Standard V under another teacher.

iv.—Results of the Second Experiment.

TABLE III.

SHOWING THE NUMBER OF WORDS CORRECTLY WRITTEN AND THE NUMBER OF ERRORS MADE BY THE BOYS OF STANDARD IV, WHOSE AVERAGE AGE AT THE BEGINNING OF THE EXPERIMENT WAS 11 YEARS 1 MONTH.

NAME (initials only).	1st Test in print. 10 mins.	Errors in 1st Test (print).	1st Test in writing. 10 mins.	Errors in 1st Test (writing)	2nd Test in print. 15 mins.	Errors in 2nd Test (print).	2nd Test in writing. 15 mins.	Errors in 2nd Test. (writing)	Total Number of Correct Words.	
									Print.	Writing.
C.A.	107	0	112	5	130	3	131	7	237	243
G.F.	95	1	79	8	90	4	105	3	185	184
W.J.	92	0	89	2	81	3	115	7	173	204
W.T.	88	7	83	5	87	12	106	8	175	189
C.L.	70	1	76	4	83	3	87	7	153	163
G.L.	70	3	69	7	73	6	81	21	143	150
J.O.	66	1	59	7	55	0	69	5	121	128
F.A.	60	0	64	2	81	2	76	6	141	140
Averages to the nearest unit	81	2	79	5	85	4	101	8	166	175

COMMENTS ON TABLE III.

(1) The first test in cursive-script was given mistakenly on the same morning and *after*, though not immediately after, the test in print-script: the cursive-script *may*, therefore, be at some disadvantage.

(2) The errors in writing are very distinctly greater in number than those in print-script; this may be expected after only four months' teaching and practice of print-script.

(3) Cursive-script, though it has been entirely discontinued except for *one* lesson a week, scores higher marks than print-script after four months teaching and practice; though a total of 16 lessons in handwriting had been devoted to it, by subtraction from other school subjects of instruction, outside and beyond the usual two lessons per week devoted to handwriting on the school time table.

(4) The " r " coefficient between the two series of totals for print and cursive-script respectively is .96; the difference between the averages is 9 in favour of writing, with a " probable error " of the mean difference of 2.3.

(5) There is a significant deficiency of 5 per cent.

v.—Conclusion from the work of Standard IV.

These Standard IV boys, of an average age of 11 years 1 month at the beginning of the experiment, after four months of almost exclusive practice in print-script, have not succeeded in equalling in facility their present capacity for writing cursive-script.

I pass now to the work of the standard immediately below, and give the results.

TABLE IV.

SHOWING THE NUMBER OF CORRECT WORDS CORRECTLY WRITTEN AND THE NUMBER OF ERRORS MADE BY THE BOYS OF STANDARD III, WHOSE AVERAGE AGE AT THE COMMENCEMENT OF THE EXPERIMENT WAS 9 YEARS 10 MONTHS. TWO BOYS IN THE STANDARD EXCLUDED WHO HAD WRITTEN PRINT-SCRIPT AT OTHER SCHOOLS.

NAME (initials only).	1st Test in print. 10 mins.	Errors in 1st Test (print).	1st Test in writing. 10 mins.	Errors in 1st Test (writing)	2nd Test in print. 15 mins.	Errors in 2nd Test (print).	2nd Test in writing. 15 mins.	Errors in 2nd Test. (writing)	Total Number of Correct Words.	
									Print.	Writing.
M.A.	100	2	92	6	120	11	114	19	220	206
W.C.	95	0	76	8	102	2	88	4	197	164
F.E.	76	6	62	10	82	5	72	4	158	134
S.E.	71	0	58	5	58	0	88	1	129	146
D.H.	62	1	64	2	70	3	78	5	132	142
W.W.....	47	4	39	12	56	2	50	9	103	89
M.W.	46	1	46	7	60	1	47	2	106	93
Averages to the nearest units	71	2	61	7	78	3	77	6	149	139

COMMENTS ON TABLE IV.

(1) It will be remembered that the first test in cursive-script was given somewhat disadvantageously compared with the first test in print-script.

(2) Errors in writing are again distinctly greater in cursive than in print-script.

(3) Print-script seems now, on the whole, after four months teaching and almost exclusive practice, to be more facile than cursive-script, but the figures oscillate a little, and in two cases the reverse is true.

(4) The " r " coefficient between the two series of totals for print-script and cursive-script respectively is .92, the difference between the means is 10 in favour of print, with a " probable error " of the mean difference of 4.2.

(5) There is a gain, significant statistically, of 7 per cent.

vi.—Conclusion from the work of Standard III.

These Standard III boys, of an average age of 9 years 10 months at the beginning of the experiment, after four months' teaching of print-script, have surpassed their present record in facility for cursive-script. It would appear that their earlier work in cursive-script has not been so thoroughly " ground in " as in Standard IV, and this standard is 1 year and 3 months younger, and probably, therefore, more plastic to nervo-muscular adjustments. But it might be a more conservative conclusion to regard these boys as on the border-line of equal proficiencies ; for it is extremely likely that additional speed tests, could we have given them under fair conditions, would somewhat, for a time, though not ultimately, have rehabilitated their facility in cursive-script as compared with print-script.

I pass now to the work of the lowest section or standard within this class.

TABLE V.

SHOWING THE NUMBER OF CORRECT WORDS CORRECTLY WRITTEN AND THE NUMBER OF ERRORS MADE BY THE BOYS OF STANDARD II, WHOSE AVERAGE AGE AT THE COMMENCEMENT OF THE EXPERIMENT WAS 8 YEARS 6 MONTHS. THESE BOYS HAD WRITTEN PRINT-SCRIPT IN THE INFANTS' DEPARTMENT, AND THEN FOR EIGHT MONTHS HAD WRITTEN CURSIVE-SCRIPT IN THE BOYS' SCHOOL, RETURNING TO PRINT-SCRIPT FOUR MONTHS BEFORE THESE SPEED TESTS.

NAME (initials only).	1st Test in print. 10 mins.	Errors in 1st Test (print).	1st Test in writing. 10 mins.	Errors in 1st Test (writing)	2nd Test in print. 15 mins.	Errors in 2nd Test (print).	2nd Test in writing. 15 mins.	Errors in 2nd Test (writing)	Total Number of Correct Words.	
									Print.	Writing.
C.G.	94	0	77	8	96	6	67	3	190	144
K.C.	71	3	57	8	62	1	64	19	133	121
T.F.	43	1	48	6	52	3	36	7	95	84
B.R.	42	1	28	18	43	3	31	12	85	59
A.J.	40	0	48	6	61	5	44	12	101	92
J.W.	40	1	32	6	45	6	42	3	85	74
S.H.	34	3	42	21	41	9	55	22	75	97
S.S.	29	1	33	6	48	0	34	5	77	67
W.W.....	26	1	26	17	44	9	44	12	70	70
Averages to the nearest units	47	1	43	11	56	5	46	9	101	90

COMMENTS ON TABLE V.

(1) The first test in cursive-script was given somewhat disadvantageously.

(2) Errors in cursive-script are again distinctly greater than in print-script.

(3) Print-script, though it had been completely given up for eight months after leaving the infants department, and then resumed for four months only, is, at the time of the speed tests, distinctly more facile than cursive-script.

(4) The correlation coefficient between the two series of totals for print-script and cursive-script respectively is .89; the difference between the averages is 11 in favour of print-script, with a "probable error" of the mean difference of 3.9.

(5) There is a decided gain on the present cursive-script records of approximately 12 per cent.

(6) The case of S.H., who was 7 years 10 months old at the beginning of the experiment, is inexplicable to me, except on the ground that he is one of those children (certainly few in number) who have a natural proclivity for a cursive style at an early age.

vii.—Conclusion from the work of Standard II.

These boys of Standard II, of an average of 8 years 6 months at the beginning of the experiment, after learning print-script in Standard I, and then, after eight months' cursive writing, resuming it for four months, show themselves much more facile in print than in writing.

viii.—General Conclusion from the Second Experiment.

There is again dislocation and delay from a change of styles, which appears to be serious in amount with the boys of Standard IV, and much less so with those of Standard III. It would seem that if a change of style is to be made, it should be made early in school life.

END OF PART I.

On Education, especially in Early Childhood.

By Bertrand Russell. Pp. 254. (G. Allen and Unwin, Ltd. 6s. net.)

A book by Mr. Russell on education is naturally of great interest. One is glad to know how the most difficult and important problem in life—that of rightly bringing up one's own children—strikes his acute and critical mind. "What I have to say (he writes) is the outcome of perplexities in regard to my own children; it is, therefore, not remote or theoretical, and may, I hope, help to clarify the thoughts of other parents faced with a like perplexity, whether in the way of agreement with my conclusions or the opposite." It may be said at once that most of his conclusions will commend themselves to open-minded and intelligent parents: they result from the doctrines of modern psychology which are now generally received; and they have the advantage of being clearly, often pungently, expressed in non-technical language.

Since the book is written for the practical help of the layman it cannot be expected to contain anything very new. Mr. Russell writes admirably and with assurance about children up to the age of his own; what he has to say about older children, and about school methods, carries less conviction. But in a final chapter on the University he speaks of a subject on which he is fitted by experience and mentality to pronounce.

The book opens with a section on "Educational Ideals," the first chapter of which is quaintly described in the table of contents as "Postulates of Modern Educational Theology." In the second, on "The Aims of Education," Mr. Russell gives an illuminating survey of various educators, who, with utterly different aims, have all been successful: "The Chinese literati, the modern Japanese, the Jesuits, Dr. Arnold, and the men who direct the policy of the American public schools." Each pursued education for some ulterior motive and did harm "from regarding the pupils as means to an end, not as ends in themselves. The teacher should love his children better than his State or his Church; otherwise he is not an ideal teacher." But love, either in teacher or in parent, is not enough: "It is necessary, also, that he should have a right conception of human excellence." Mr. Russell takes four characteristics, four cardinal virtues, as forming "the basis of an ideal character: vitality, courage, sensitiveness, and intelligence." His analysis of these is excellent. A few remarks on fear may be quoted: "Fear is exceedingly infectious: children catch it from their elders even when their elders are not aware of having shown it. Timidity in mothers or nurses is very quickly imitated by children through suggestion. Hitherto, men have thought it attractive in women to be full of irrational terrors, because it gave men a chance to seem protective without incurring any real danger. But the sons of these men have acquired the terrors from these mothers, and have had to be afterwards trained to regain a courage which they need never have lost if their fathers had not desired to despise their mothers. The harm that has been done by the subjection of women is incalculable; this matter of fear affords only one incidental illustration."

The remainder of the book falls into two sections: "Education of Character" and "Intellectual Education"—these being treated separately for convenience. Mr. Russell gives much sensible advice, to which it is hardly necessary to refer here. His general thesis, that " the building up of character . . . if rightly conducted, ought to be nearly complete by the age of six," is undoubtedly true ; while differing widely from Freudians he follows them in their emphasis on the importance of the early years. The chapter on " Sex Education " is particularly sound. " Answering questions is a major part of sex education. Two rules cover the ground. First, always give a truthful answer to a question ; secondly, regard sex knowledge as exactly like any other knowledge." Most people would agree with this advice, even if they have not the courage or the mental decency to carry it out ; but when Mr. Russell says that if a child " does not ask spontaneously, he must in any case be told before the age of ten, for fear of being told by others in a bad way," he surely displays ignorance of children at that age. It may be necessary for some children to " know the nature of the sexual act " at ten years old ; but for the great majority it is neither necessary nor desirable : they would not be interested, nor would they understand, if they were told. This error is worth emphasizing, since it mars an otherwise excellent chapter. Mr. Russell's whole indictment of the lies and shams that have usually surrounded this topic is beyond praise. The only trouble is that the sort of people who need his advice are unlikely to open any book by Mr. Bertrand Russell.

In the chapters on schooling the ideas are mostly those of Montessori and Miss McMillan. But there are many wild statements, *e.g.*, " All geography ought to be taught on the cinema ; so ought history at first," which show complete lack of experience ; or, again, " I shall assume that by the time a child is five years old he knows how to read and write." Speaking of learning by heart, the author remarks that " modern educationists give it less and less place " : he can hardly have read the Report on the Teaching of English. And he spends considerable time in flogging a dead horse when he doubts " whether modern methods are as successful (as the old-fashioned) in teaching a man to endure voluntary boredom." On this matter he is not even consistent. " Boredom voluntarily endured by the pupil in order to satisfy some ambition is valuable if not overdone " ; yet a few pages later we read : " Knowledge which is felt to be boring is of little use " ; and again, he advocates the " boredom " of an empty room as a punishment for idleness. Mr. Russell seems unfortunate in the use of this word : thus it is strangely applied when he says that " on the whole, the first three months involve a good deal of boredom." Nobody can know what a baby's state of mind may be ; but it surely cannot be anything resembling the "boredom" of an adult.

Throughout the book Mr. Russell tilts against the classical curriculum. One passage, though it begs the whole question of " Formal Training," deserves quotation. " A classical education is almost entirely critical : a boy learns to avoid mistakes, and to despise those who commit them. This tends to produce a kind of cold correctness, in which originality is replaced by respect for authority. Correct Latin is fixed once for all : it is that of Vergil and Cicero. Correct science is continually changing, and an able youth may look forward to helping in this process. Consequently the attitude produced by a scientific education is likely to be more constructive than that produced by the study of dead languages."

The theory is ingenious ; but it is all speculation. Yet when Mr. Russell says that " the usual type produced (by the classical education) is, as might be expected, niggling, unenterprising, and lacking in generosity," one hears the ring of actual experience. Enough has probably been said to show that this is a very readable work, and one which should prove helpful to the type of parent who seeks confirmation for sane notions which he has already formed. But to the psychologist its interest is even greater, for the insight that it gives him into Mr. Bertrand Russell.

F. A. CAVENAGH.

Free Thought in the Social Sciences.

By J. A. Hobson. (Allen and Unwin. 10s. Pp. 288.)

FEW publicists to-day belong more unmistakably than Mr. J. A. Hobson to that English tradition of which shrewd common sense, an appetite for the practical and actual, and a marked distaste for windy speculation and any sort of " schwärmerei " are the chief characteristics. Certainly these and other excellences are prominent in his latest book. " Free Thought in the Social Sciences " is, indeed, a rare combination of food and tonic, full of challenging matter put forward with admirable candour and vigour.

It is over twenty years since Mr. Graham Wallas, in his " Human Nature in Politics," called attention to the irrational factors in the political behaviour of men which political theorists had overlooked. Mr. Hobson's book carries the critique of a complacent intellectualism further by exposing the irrational factors which help to determine the attitude and outlook of the theorists themselves. He analyses the different sorts of bias and taboo, prepossession and vested interest, which influence the doctrines of economists, sociologists and moralists, and which so long as they remain unrecognized and unconscious " urges "—a favourite word of his—effectively hinder a disinterested social science from coming into its own. His book deals thus with the " human nature in theorists," and as Mr. Wallas summoned social psychology to the task of correcting academic political theory so Mr. Hobson sees in the psychology of motive and instinct, with its doctrines of unconscious complex and " rationalization " process, the chief hope of freeing the social sciences from the almost irresistible distortions of bias and vested interests. Most of all, in the case of economics, where we are told (p. 166) " only by a sedulous psycho-analysis can the science and art of economic welfare steer a clear course in the world of thought and conduct."

Mr. Hobson divides his book into three parts. In the first, " The Art of Free Thought," he outlines his main argument, and in the light of this proceeds in the second to examine economic theory both in its historical development from Adam Smith and in its modern representatives, Academic and Marxian. In the third part the searchlight is turned, though in an avowedly more cursory way, upon some current political and ethical theories or prejudices—the politics of power and Imperialism (in criticizing which Mr. Hobson is handling a congenial theme), of eugenics, and the ethics of moral individualism. In his final chapter the author expresses his firm faith in the power of the disinterested devotion to truth to hold its own in the end against every " urge " from within or temptation from without making for self-deception, evasion, paltering compromise, obscuration, and self-interest. The book, indeed, ends on a fine note of hope for which the unsparing exposures of the main arguments hardly leave the reader prepared.

With Mr. Hobson's general contention there can hardly be anything but agreement, however much we may differ from him in this or that application of it. We cannot be reminded too often or too forcibly of the pressures that bias the thinker, especially the thinker on social, political, or economic problems, where work is peculiarly liable to error, as Mr. Hobson well points out, both from " the refractory or obscure nature of the material " and " the intrusion of motives alien to reason " (p. 20). Much of the argument here—for instance, the warning against the deflecting suggestions in language and metaphor—is, of course, an oft-told tale, but it bears re-telling in Mr. Hobson's vigorous fashion, and some of his observations are as timely as they are true. Thus, speaking of the subtle influence upon their social theorizings of the sort of " inferiority complex," so common among academic persons, he remarks : " Mere thought is somehow felt to be a badge of inferiority even among those who profess the keenest pride in the life of culture. . . . The ' intellectual ' is terribly sensitive to the approval and disapproval of rulers and other authorities in the outside world " (p. 53). Mr. Hobson's calm exposure in these chapters of every sort of warping prejudice and prepossession is like a jet of cool water in an atmosphere sultry with fume and steam. But now and again, as we read, we are conscious of a certain chilling limitation of sympathy, a blind side which is, perhaps, the defect of the author's qualities. Mere wind and " hot air " are to be deprecated, but not at the cost of making the atmosphere too thin to breathe, for atmosphere is needed for inspiration. A metaphor may convey truth as well as error. Shakespeare's " There is a tide in the affairs of men . . ." brusquely dismissed by Mr. Hobson, may contain a wisdom beyond the criticisms of a " scientific " sociology. But the insight of the poet, as of the religious consciousness, finds little support in Mr. Hobson's philosophy.

In the second part of the book we have Mr. Hobson the economist, first showing (and very convincingly) how the unconscious bias to acquiescence in a capitalist society based on private property is revealed in the " classical " political economy, next examining the economics of the Cambridge School of to-day, and especially the work of Professor Pigou and the " Marginalists," to bring home the same point, and finally exposing the more obvious, if not more serious, distortions on the opposite side in the proletarian economics of the Marxians. Mr. Hobson's own more constructive discussion, interesting as it is, hardly seems to spring directly from his main argument ; it is, at least, easily detachable. And one is moved maliciously to seek for his own particular bias ; is it a bias against " academic " theories as such ? At times it would seem to be. And though he takes pains to distinguish between a legitimate methodological abstraction and an illicit abstraction " of that very nature which is professedly the object of study," he has not made out a convincing case for including in the latter the mathematical calculus of marginalist economics. Even the " economic man " is a perfectly legitimate and useful abstraction if he is not taken for more. If modern economics are too mathematical and quantitative a study, and too little concerned with qualitative differences, as Mr. Hobson maintains, it is not obvious why this is the result of any specific interest or bias.

It is, however, the last part of the book that will be found least satisfying. The perpetual recourse to " rationalization " to account for current political and moral principles begins at length to be unconvincing. It is probably too late now to protest against the misuse of this word by psychologists ; " rationalization " has become the accepted technical term for the process by which a man persuades himself that his interested or irrational behaviour is strictly rationally and ethically motived. But, at least, if the word is not to have its natural meaning of " making (really and not merely ostensibly) rational," it should serve as a reminder that there is really such a thing as genuinely " rational " thought and genuinely " moral " conduct. Only a genuine currency actually in circulation is counterfeited. Mr. Hobson would, of course, fully admit this, but the whole tendency of his argument leads him not only to suspect appearances everywhere, but, also, it would seem, to prefer an explanation of conduct which confirms his suspicions. Occasionally this leads to an inconsistency. Thus we gather that where property owners have come to accept the view that their property is a trust for society this is just an example of " the rationalization of the egotistic motives, which cloak their craving under the sublimation of the social instincts with which they associate themselves " (p. 224). But a little later the more enlightened attitude of many modern employers to their workpeople is claimed as " the most remarkable of modern advances in social ethics " (p. 249.) The fact is that " rationalization " often is a genuinely making rational (or moral), and is anyhow the unwitting tribute paid by the unenlightened mind and conscience to a genuine standard of reason and right.

Mr. Hobson's faith, as has been said, is in psychology. The prime need in his view is not so much an awaking of the mind to finer issues, still less an avowedly religious fervour, but rather a discipline to emancipate the disinterested search for truth from the alien controls by which it is at present so severely handicapped. Can such a sovereign discipline be found in modern psychology ? To know the biases to which one is most susceptible and to allow for them so far as one can—this is clearly a *sine quâ non* if thought is to be independent. But it may be suggested that we are better assisted in this task by the example and record of the great thinkers—of Faraday or Darwin or Mill—than by the still involved and confusing (and one may add not unbiased) deliverances of much recent psychology. And the student of social problems will find in books like Mr. Hobson's much more help to the liberation of his thought than in half a dozen volumes of psycho-analysis.

J. W. HARVEY.

Educational Psychology.

By Charles Fox. (Kegan Paul and Co., 1925. Pp. xiii+380. 10s. 6d. net. (International Library of Psychology.)

THIS is a book which I have read with a great deal of interest and admiration, but also with much mental disagreement and irritation. I state this last out of a sense of fairness, for if the reader of this review understands that it is written by one whose mind works very differently from the author's, he will be prepared to discount statements and attribute them to the conflict of opposing schools of thought. It would be easy to write a very laudatory account. Anyone who thinks like Mr. Fox would indeed be bound to do so, for the book is excellent of its kind. It is a capital little-endian book ; only I happen to be a big-endian. Nor is the conflict at bottom more fundamental than was that in Lilliput, I believe ; and I should be glad to subscribe, for example, to what Mr. Fox says about " *Gestaltung* " and " configurations " and " insight " if he would take back what he says about "mental atomists" (as he calls us). But I fear he won't.

The opening chapter at once arouses in me the mental set of opposition. It is on the nature of mind, and examines the compartment theory, the faculty theory, the association theory, the structure theory, and the *Gestalt* theory. The first three are rapidly dismissed—the modern behaviourist being in passing described as a kind of associationist who substitutes the association of movements for the association of ideas. Though this dismissal will probably meet with general approval, it seems rather sweeping. Surely many mental events can be quite adequately described in terms of these outworn hypotheses ; and certain it is that the gifted upholders of them would be to-day quite shocked at the extreme forms of their theories which are set up to be refuted. However, let them go. But I cannot let the Structure Theory follow to the same fate without expostulating that it is quite possible to believe in many of the articles of the *Gestalt*-psychology creed without renouncing all allegiance to some of the ideas which Mr. Fox calls Structural. Something indeed is conceded in this direction on page 13, and that concession appears to be a very important one, although Mr. Fox thinks it a mere convenience and manner of speaking. He has been discussing " mental dispositions," and admits that this concept may be helpful, just as the (presumably equally erroneous) concept of energy in physics may be helpful, as, for example, in bridging the gap between the heat which changes water into steam and the work which the steam can perform. But that kind of performance is all that I ask of *any* concept, and I believe it is all that is real in any concept ; so that the theory of energy is " true " if it is efficient in bridging that gap and enabling me to make predictions. I do not find the *Gestalten* of the newest psychologists any more true in this sense than are quite a number of the " exploded " theories, and I am quite prepared to accept both these and those.

Mr. Fox, with a large and increasing number of writers on psychology, dislikes anything of the nature of analysis of the mind, or any attempt to " explain " the mind by references to the nervous system. Those who are unable to shut their eyes to the fact that analysis has been the great method of advance in all other sciences they call mental atomists ; whom they accuse of denying the unity of the mind, as though a chemist denies the liquidity, the wateryness, of water as soon as he learns that it can be analysed into hydrogen and oxygen. And those who are unable to shut their eyes to the prospect that nervous system, and mind, will some day be brought into one common or mutual explanation, are called mechanists.

In so far as Mr. Fox attacks atomists and mechanistic psychologists in the same way as he attacks the mechanical learning of formulæ and prefers understanding, I am, of course, with him. But then I think that he, and Koffka and Koehler whom he follows, do not understand people like Thorndike. The danger may be admitted that a psychology of " bonds " and " elements " may mislead a disciple, as it always permits an opponent to think that memory with understanding (for example) is just a mere matter of associating words as one might associate nonsense syllables. Yet one may recognize a difference in degree so great as to be profoundly important, and, nevertheless, suspect that there is no difference in kind.

It is also true enough that a configuration is from the beginning seen as a whole rather than built up from elements ; a whole at first vague and badly differentiated from the background, later more definite and more clear against it ; whereas any psychology smacking of associationism is liable to mislead its disciples into thinking that first individual stars become clear, then the constellations which they form. But, on the other hand, constellations do actually consists of separate stars. Configurations do have their parts and their associated elements. It is quite possible to realize this without imagining that the sum of the properties of the parts equals the properties of the whole. Scientists are far past simple addition in their mathematics. " Notes of a melody are not isolated things but receive their colour and value from the melody as a whole." Yet there are also notes *simpliciter*, which being combined make melodies. Surely I can realize that there are melodies without denying that there are notes. Surely a study of notes may be important as well as a study of melodies, and melodies be fruitfully analysed into portions and phrases. There is the note absolute, E; the note relative to a tonic, *me* ; and the first note of *Maxwelton's braes are bonny* ; and the degree of *Gestaltung*, the degree of relativity, the degree to which the background and the configuration enters, increases as we proceed from the E to the *Max-*. But I may recognize that a note called E exists without thinking that this *Max-* is *only* E. It might be any other note ? Yes. But pitch is in some circumstances important, and, at least, it is always *me.**

There is no necessary and irreconcilable difference between atomists and synoptics. The former, if they are silly enough, may think that continuity is like a cinematograph film; but they needn't do so, and don't always do so by any means. The latter may permit their synoptic *Anschauung* to become mere glowering at the world. It is fairly safe to say that no scientific advance in any subject has ever proceeded far without an atomistic theory to help the progress, and that in the main it is caricatures of atomistic tendencies which Mr. Fox finds such pleasure in refuting. One gets the same division into opposed schools in nearly every province of thought, and nothing is more certain than that both are right, except when they are saying that the others are wrong. A football team is more than fifteen men—of course it is—but for all that it contains fifteen men, and its maker has to bring fifteen men together. A brain is more than a very large number of neurones, yet it contains neurones; and, by the way, it contains enough of them to correspond, by their almost infinite combinations, to however subtle a mind; enough to account quite easily for " all the nuances and vowel sounds of a language, in all their living complexity " (132). At any rate, if it doesn't, the proof is on those who say so, for the obvious and daily more certain theory is that it does.

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* About a week after I wrote this I was very interested to chance upon this passage in the " Advanced Montessori Method," II, 319: " As is the case with colours, geometrical shapes, etc., the children begin at this point to explore the environment. One will come to the teacher at the piano and say, striking a key, ' This is *stel*,' meaning that the note corresponds to the first syllable of the first word in some song he knows (Stella, Stellina). It happens that the key struck by the child is a *do*, the very note corresponding to the syllable *stel* in the song."

I warned the reader at the beginning that I was a big-endian, and he may attribute my tirades to party politics, an it please him. But a little of the friction is due to a very simple matter, the practice of putting all the references at the end of the book. This, no doubt, is in certain respects praiseworthy. But Mr. Fox's trick of referring to people indirectly, as " the author of a widely-read sociological work," or " a very competent Danish observer," together with the fact that one has to remember the *number* of the chapter, if one wishes to look up the reference, leads to some praising with faint damns. If it is wrong to say Graham Wallas or Rasmussen in the text, or at the foot of the page, couldn't the references be numbered straight ahead through the chapters, or the names of the chapters given at the head of each group of references. And then Rasmussen (239) and Graham Wallas (110) are omitted from the index because they are not explicitly named in the text. McDougall is quite elaborately indexed; but the index does not include the pages where he is quoted or referred to anonymously. For example, as " one writer " (128), or " an exponent of the view " (132).

And now having blown off this much steam I feel much better, and can turn to all the admirable parts of the book (*i.e.*, those with which I agree). First, perhaps, I ought to set out, if I can, some part of my own educational creed.

Understanding and interest are the great things that matter, intellectually; and tolerance and self-sacrifice, morally. Understanding yields less often to a direct assault than to a flank attack, and even to a state of siege; during which one has to busy oneself with trench warfare, that is, one has to occupy oneself with the mechanical and automatic, even trivial, details of the matter. Which doing faithfully, and letting the mind yet not get sunk into apathy, one finds suddenly one day that the fortress has capitulated. Genius will out in this sense, that it cannot occupy itself with the daily tasks of any intellectual subject without presently realizing generalizations and abstractions which those tasks illustrate. A teacher's duty is to arrange the environment so that the mechanical tasks are performed purposefully and cheerfully and interestedly for some nearer and inherent end, trusting, as he may confidently do, that those minds *which are capable of it will, as he from time to time encourages them, see the more distant and more abstract laws and purposes. No teaching is more exhausting or less successful than that which is continually trying to get pupils to understand by demonstration. True teaching does this only when the result is already certain, having been ensured by the preparatory tasks.*

Intellectual heights can be climbed alone, but tolerance and self-sacrifice only learned in company. School work, therefore, while it may be individual at times, must at others be done in groups ; yet by division of labour the members may still go their own gaits to the common goal, helping one another as members of a team.

Many paragraphs in Mr. Fox's book seem to me to be in agreement with my creed ; and if the directly educational references are only too few, that is a fault which is very common in books on educational psychology. " Where interest is aroused the method of learning is of far less importance than is usually supposed " (152). " It is evident that the real reason for the retentive memory in all these cases is the organization of the facts brought about by an intense interest in them . . ." (163). " The love of a school because it is ours or because it has a fine tradition and a long history is no doubt a stage in moral growth ; but only the first stage " (189). " A suggestive teacher . . . conveys the impression that he has touched only the fringe of the subject or has given a bare hint of possibilities " (190). " A casual suggestion made when the pupils are exerting their mental activity to the utmost in some other direction is much more likely to be effective than one made impressively when they are attending to it alone " (198). " Schoolboys by no means despise learning if it is carried easily and accompanied by ability to control them " (203). " The more one contemplates it, the more one realizes that the situation of the ape with the stick and the desired prize resembles that of a man with a pencil and a problem to be solved " (183).

These, and the general tenor of many chapters, seem to me to show —what, indeed, I know from conversation—that Mr. Fox and I agree uncommonly well in our educational conclusions, despite our very different psychological allegiances. And we must all be grateful to him for his experiments, suggestive as to their conclusions, and useful as models. They serve in the main to show the necessity of language as the tool of thought, and with this conclusion my agreement, at least, can be enthusiastic, although it is clear that Mr. Fox's visual imagery is much less vivid than my own. The experiment of memorizing a confused jumble of intersecting lines (89), and some others, are only given passing mention, but a chapter is devoted to an experiment with lantern slides showing suits of armour (Chapter III). This was planned to show that effective observation depends on preliminary knowledge of what we are about to observe, and that an adequate terminology is essential to preperception (60) (both principles of great importance in teaching). Mr. Fox very honestly tells us of his preliminary experiments which failed to show this, and gives his explanations for their failure, as, for example, that a half-learned, and unfamiliar, terminology may actually obstruct observation, time being taken in recalling the technical terms. But his later experiments proved the thesis to his satisfaction.

In parenthesis Mr. Fox deduces from his data one other conclusion which is doubtful. " It is important (he says) for the theory of education to realize that systematic training tends to produce greater uniformity within a group" (69). This is contrary to the bulk of experimental evidence, and Mr. Fox might consider whether, in his comparison, he is justified in using the coefficient of variation as he does for this comparison. The extreme range of the trained group is much increased but this is, as he will point out, due to one subject. The points of the scale, however, are hardly likely to be of the same value from 45 to 94 as from 82 to 118 (omitting the prodigy), and the phenomenon may be of the same nature as that caused by pushing a scale of marks up against a maximum, or, at least, against a region of great difficulty. A simple test in arithmetic will spread eight-year-olds widely, yet crowd sixteen-year-olds together; nevertheless, by a truer measure, the latter are more scattered.

Finally, a word may be said of Mr. Fox's chapters on Freud and Psycho-analysis. He is sceptical and, indeed, rather contemptuous and while, no doubt, the Freudian school has dogmatically asserted much that is based on very insecure foundations, and is narrow and intolerant, yet most psychologists would at least admit that their science will, when the turmoil has died down, retain many additions derived from this source. What James wrote thirty years ago is hardly a sufficient refutation of a principle which is not merely a restatement of psychological hedonism (233). And even those of us who agree with Mr. Fox that Freud's views about infantile sexuality are exaggerated and narrow would shrink from adducing statistics from children's courts of the percentage of what are technically classed as sex-offences: for Freud's thesis is that many if not all offences not *explicitly* sexual are at bottom of sexual origin. However, I have no wish to defend the psycho-analysts—I merely feel even less convinced by Mr. Fox than by the Freudians. Here, again, however, his practical advice is better than his logic, and he closes his chapter by remarks, on pages 242-5, which will obtain universal agreement.

GODFREY H. THOMSON.

Experimental Psychology.

By Mary Collins, M.A., B.Ed., Ph.D., Lecturer on Applied Psychology, University of Edinburgh, and James Drever, M.A., B.Sc., D.Phil., Head of the Psychology Department, University of Edinburgh. (London : Methuen and Co., Ltd. 8vo. Pp. viii+315. 8s. 6d. net.)

Of recent years the extraordinary progress of experimental psychology in all its branches has more than justified the hope and the courage of the great pioneer in the science who, less than five decades ago, established the first laboratory for experimental work at Leipzic. Nowadays, it would be safe to say that there is hardly a college or University in the world, in which the subject is seriously taught, which is not equipped with a laboratory, however modest, in which experiments are demonstrated and original work carried out. The astonishing output from these many laboratories—much of it of a very high order—is more than the already large number of monograph series, journals and periodicals devoted to such publication can easily handle ; and it becomes increasingly difficult for the student to keep pace with the literature of the subject and abreast of the work that is being done.

A significant feature of this progress in investigation and discovery is to be observed in the fact that what has been experimentally established in the laboratory has successfully been applied to the practical affairs of every-day life. Education, industry, medicine, are not alone in being tributory to psychology.

It is true that, with regard to its theoretical aspects, when psychology is systematically treated, there is still much confusion—and even contradiction—among psychologists, who, taken as a body, seemingly are not able to agree even as to what psychology is. But that, perhaps, is a healthy sign rather than a morbid symptom. There is more than one point of view from which the problems of the science can be envisaged ; and, from the clash of the blows given by the champions of the various " schools " ultimately, there can be no doubt, a shaped and proportioned theoretical science will emerge in which all the aspects will be represented in due balance and harmony. There is really less contradiction—and confusion—than appears ; and, after all, the phenomenon is to be expected in the case of a " live " science, as a phase in its growth and development. There is precedent for it. None the less, if the final product —the systematic presentation of psychology—in common with all other theoretically complete sciences, transcends, as indeed it must, experience, however it comes to be fashioned, it will certainly rest, in all its aspects, on the basis of experimentally verified fact.

It is high time that an English text-book, embodying the already ascertained experimental data of psychology, which have up to the present been so scattered as to be with difficulty only at the service of the ordinary student, should be published. The principal difficulty of producing such a work has already been indicated. To write it is like measuring the growth in height of a child by making pencil marks on the wall. The child outgrows the marks. Nevertheless, as the authors of " Experimental Psychology " say in their preface, ". . . the science has now reached such a stage of development that it can be taught from a point of view which is definitely experimental." By this they do not mean so much, I take it, that experimental psychology can be presented to the student, along with his laboratory course of practical work, as a kind of commentary more or less parallel to and illustrative of a general course in systematic psychology. The view—and it certainly is the right view—advanced in the quotation is that psychology is now an experimental science like physics or chemistry, and no longer an offshoot of philosophy. It is also intended to meet the criticism that " the systematic presentation of the science of psychology is almost wholly divorced from the experimental work of the psychological laboratory." This criticism which, of course, the authors do not make their own, is not, I believe, altogether well founded. Surely it cannot be said that teachers of the science ignore the recent results of experiment in their general courses. But, if we consider written rather than oral presentations of psychology, there is much truth in the criticism. Most of the standard text-books are badly out of date. And this book was needed. Apart from such valuable works as those of Myers, Titchener, Whipple, which are of the nature of laboratory manuals rather than expositions of psychology from the experimental point of view, there is nothing precisely like the present work to place in the hands of students. Confessedly, it is elementary. It is intended to " cover a first year student's work in experimental psychology," and to be of use to the general reader as well. This latter aim is not so unimportant as some people might think. The general reader is more interested in psychology than is commonly realized ; and if psychology is, as it should be, built upon experimentally ascertained fact, his interests should be taken into account. Accordingly—and this is also true, as the slightest experience of teaching the subject shows, when the interest of the student is consulted—the exposition must be both clear and simple, as well as sufficiently detailed. The authors have succeeded in making their book both simple and clear ; and—what is of even greater moment—have succeeded in the more important aim of giving us a text-book which, though experimental in the sense of being a presentation of facts of experimental origin, is, as far as it goes, a general introduction to psychology as well.

Following on an arresting introductory chapter, in which, after outlining the history of this last-born of the experimental sciences and sketching out the nature of psychological as distinguished from physical experiments, an excellent exposition of the psycho-physical methods and the statistical treatment of psychological data is given, five chapters are devoted to sensation. The first of the four appendices to the book—on the Sense Organs and the Nervous System—may be usefully read in connection with these. The remainder of the work deals with higher mental processes, or behaviour which indicates or is connected with them. The topics of the chapters are as follows : Perception, Action Study, Attention, Work and Fatigue, Suggestion, Feeling and Emotion, Imagery and Association, Learning and Memory, Higher Thought Processes, Language, and Mental Testing.

It will be seen that *most* of the topics with regard to which experimental work has been done are represented, though notable omissions are Conation, Volition, and Character Qualities in general. Some good experimental work has been done in these directions, and was worth noting.

But the authors have disarmed criticism on this head in their Preface by their statement as to omission and selection. And no one can, I think, criticize Dr. Drever if he chooses to leave Conation out of an experimental text-book at the present stage of psychological development ; though many of us would have welcomed the selection of experimental evidence which he might have made.

Three other Appendices must be noticed. The first is on Simple Methods of Calculating Correlations. In the present state of the science every student—and every well-informed general reader—should have the whole meaning of correlations closely brought home to him. The second Appendix has relation to the Effects of Drugs on Consciousness. The last—which is arranged according to the topics of the various chapters of the book—gives a well chosen and very suggestive list of original works of reference for further reading. This last should prove to be of the greatest value to the student who is desirous of extending his knowledge and acquainting himself with the literature of experimental psychology at first hand.

There is an Index—a most necessary thing in a work of this kind ; but it is not altogether beyond criticism. Conation, for instance, is not included in it, though an exceedingly important reference is made to it, in connection with Emotional States, on page 194.

It is, perhaps, the sincerest form of appreciation in reviewing a book like " Experimental Psychology," to pick out its faults rather than to insist upon its excellences, since the former is really more difficult than the latter task. There are twenty-five illustrative figures and diagrams in the text and appendices ; but nothing in the way of apparatus is shown—with the exception, possibly, of the face of a Masson's disc and a schematic plan of one arrangement of the psycho-galvanic apparatus. For didactic and expositional purposes illustrations of apparatus are helpful, and would appear advantageously in a book intended for the general reader as well as for the student professed. But possibly the companion volume which is promised by the authors in the shape of a laboratory guide is a sufficient reason for the omission. We shall look forward to its appearance.

What is more serious is the confining of the topics of the work almost entirely to those of cognitive process. It is true that this has been of all the most systematically investigated in the laboratory. But, as has been said, work has been done on the other aspects of mental process as well ; and many psychologists and educationalists feel that any light thrown on these processes, no matter how little, is of the greatest importance. Character, rather than information or capacity to handle it, is beginning to be recognized as the most fundamental aspect of psychology. Cognition is at the service of conation, and knowledge the handmaid of instinct.

The nearest approach to this aspect is to be found in the chapter on Feeling and Emotion ; and it is to be hoped that in future editions of " Experimental Psychology"—which can confidently be expected—some stress will be placed upon it.

Criticism, as has been hinted, is in this case congratulation. The authors are certainly to be congratulated on their work. It will be welcomed, not only by professed students of psychology, but by students of education as well. Indeed, no one who needs the ascertained experimental results of "pure" psychological investigation, whether as a background to pedagogical, medical, industrial, or other work, can afford to be without it, unless he has the advantage of a well-equipped library of periodical psychological literature—and the time to search for what he wants and read it.

It is a laborious task to put together the results of the work of others. Drever and Collins have done the work well ; and deserve the thanks of psychologists for having done it.

F. AVELING.

Education in its relation to the Common Purposes of Humanity.

By E. T. Campagnac, M.A., Professor of Education in the University of Liverpool. (Crown 8vo., cloth, pp. 171. 5/- net. Sir Isaac Pitman and Sons, Ltd.)

HOMELY and rugged truths are seldom presented with the directness, sincerity, and winsome eloquence characteristic of the pages of this little book. It has all the graces of artistic exposition that we expect from the pen of Professor Campagnac ; it has a philosophic outlook and a mellow wisdom that should give it a position of its own among recently published works on education. Even if its fundamental premises and arguments are rejected or queried the book itself will remain as an honest, a courageous, attempt to envisage education as the most general of human concerns, to state its fundamentals in terms of human interests and activities, to show that a liberal education, rightly conceived, is a legitimate ideal for every man—something that may be had " with little aid from schools and none from Universities." It is thus a book not only for the student but for the " general " reader.

The characteristic note of the earlier chapters is the postulation of society as the *primum mobile* of the educative process. " The older members of society educate its younger members because the younger, if not educated, would make life intolerable and the world uninhabitable for the older. They act in self-defence." (Page 5.) And society seems to be not only the *terminus a quo* but the *terminus ad quem*, for we read (page 9) : " If, then, the main, the final, purpose of education is to make us fit for society we must learn what society is and obey the rules which must be honoured if society is to continue. There is another purpose which men have in view when they undertake the business of educating themselves or their fellows, and, in particular, their children ; it is that of fostering the development of the several members of whom society, any society, is made up. But as the existence of these members is due to and depends upon the previous existence of society itself, it is clear that their development must be pursued within limits and in directions prescribed by society itself. If they destroy society, they must destroy themselves, since they are members of it." In the subsequent exposition the importance of the individual's contribution to society is not overlooked, but there seems to be a rather ruthless subordination of the individual the grounds of which are debatable. These grounds are, apparently, (1) the temporal priority of the social group, and (2) the dependence (or relative helplessness) of the individual. To some the argument based on the first point will appear in its educational, as distinguished from its biological, implication to be tinctured with the logical fallacy *post hoc, ergo propter hoc,* while the second may seem too reminiscent of " Nature, red in tooth and claw," to be a safe foundation for the statement of educational theory in the twentieth century. Those who would accept the first as a cogent argument for the subordination of the child to society may well question its complete appropriateness for a " general " theory of education that will also apply to the adult ; and those who are impatient of an almost continual reference to society as it is *de facto* constituted may venture to remind the author that his later chapters give excellent reasons for supposing that ethical (or political and ethical) concepts are safer corner-stones upon which to build the educational fabric than are the concepts of biology. They may, in short, argue that the principle which Kant desired the framers of educational schemes to keep before their eyes, should also be kept in mind by the exponents of ultimate educational principles :—"Children ought to be educated not for the present, but for a possibly improved condition of man in the future." To take as final the present attitude of society towards individual development may be to beg the question of education ; to construe its action in terms of self-defence may be unfair, unless, indeed, it be conceded that an education that fosters the individual contribution is the best, and the only safe, weapon of self-defence that a society can wield.

These objections are very largely met by the breadth of Professor Campagnac's admissions, but the subsequent chapters reinforce the supremacy of society at practically every point. " The individual is to be developed, of course. But why ? Surely in order that he may realize his part in a life larger than his own: except as a part of that larger life he cannot come to the perfection,whatever it may be, of his own powers and nature." (page 27.) With eloquent persuasiveness the author shows the importance of forging vital links between learning and those activities of mind and heart that alone bring a real apprehension of our social and spiritual inheritance. But the crucial problem of all educational theory, whether it emphasizes the individual or the social aspects of an activity that must somehow be made to embrace and unify both, is a problem of method. *How* are we to make the pupil *realize* his part in a life larger than his own ? Are we to mirror in the school or the study the conditions, the rewards and punishments of existent society, or are we, in the hope that the school society will gradually merge into the social relationships and attitudes of the outer world, to allow the pupil to build up, largely by his own efforts, a social order in which the conditions shall be, at least partially, self-imposed ? Professor Campagnac has no hesitation in answering these questions. He makes an inquiry into the meaning of membership in an actual society ; he finds that membership entails certain conditions and brings certain advantages ; he applies his results directly to the educative process, for he is convinced that " the gifts and the lessons of society must be imposed upon the young, before the young ask for either." (page 42).

The interesting discussion of these gifts and lessons (in Chapter V) does not make very clear whether their order is to be taken as indicative of a time sequence, or of importance and value for society. The following chapter speaks of " stages of education " and of the first—the stage in which society gives us safety and asks for obedience—the author remarks : " It is a stage which we never wholly leave behind us ; but we may distinguish it from another stage which seems to follow it, or from another phase of our development." (page 48). This succeeding stage or phase is one of criticism or self-interpretation. " Society . . . has through many agents, but especially through the custodians of our childhood, provided us with the material with which we may and must become critics of that safe, but small place, our home." (page 49.) In this stage society demands an intelligent loyalty which carries us beyond facts into the region of ideas and teaches us to see not only what is but what ought to be. " The third lesson which society teaches us, after those of obedience and loyalty, is the lesson of co-operation ; and its third gift is the gift of religion, the sense of being bound to a community in whose perfection the clear but imperfect alliances which hold us to the familiar but incomplete society of common experience will be at once cemented and resolved." (page 51).

Is the best method of strengthening the young pupil's sense of membership in a society to present social ideals " first for their dutiful obedience, then for their intelligent loyalty and, at last, for their religious co-operation ? " (page 89). Is such a sequence true to the process of education in an adult ? Is not a surer point of contact secured through the presentation of some value, or ideal, or activity which is likely to evoke at least the partial, yet real co-operation of our pupils, and which, when it has provoked their intelligent criticism, may finally command an obedience that is both loyal and intelligent, perhaps reverential and religious ? There is little doubt as to the author's answer. Although we are counselled to take our pupil at his face value the author believes that a child does not properly deserve the title of a human being before we put forth efforts to make him into a human being. We have really to teach the child to live, to anticipate his needs, provide for them, modify them, supply him " not exactly with what he wants, but with what we think he ought to want." We have, in short, to make real changes in the nature of the pupil; we need not shrink from exercising a wise compulsion and constraint ; we shall not be prudent or kind in refusing a training in deliberate asceticism. The undergoing of hardships must be practised if later life is to bring the reward of a stern self-mastery.

Towards the end of his book the author writes : " After what I have now said, there is no need for me to confess that I am old-fashioned. I have never learnt to believe that it is no part, or at most but a very small part, of the duty of a teacher to teach, that it is his rôle to stand " aside," or " in the background," and watch his pupils develop themselves." (page 149). Does this active rôle of a teacher stand for his whole duty ? Does it encourage him to observe the signs and tokens of *real* development ? Professor Campagnac refers with approval, both in the earlier and later chapters of his book, to the late Lord Bryce's opinion that rustics of sixty years ago, unable to read or write, were as well qualified for the discharge of their civic duties as are their grand-children of to-day. It is fair to assume that the educational methods of the intervening years inculcated a dutiful obedience and did not allow compulsion and restraint to slip very far into the background. They were the classroom methods of teachers who believed that they knew better than a child what childhood needs to elevate it to the cultural plane of humanity. Professor Campagnac rightly points out that such teachers gave too narrow a meaning to "civic" duties, and provided too narrow a preparation for them. Surely one way of escaping from such errors is indicated in the method of observation that the author has never learned. The only breadth of treatment that really matters is the one that gives the pupil a broad view; the only preparation of value is one that really prepares the pupil for civic duties. Broad views and effective preparation are seldom the results of dutiful obedience; they are seldom the fruit of imposition and restraint. They come from intelligent criticism of the self and others, from some form of real co-operation with a teacher who is ever prepared to learn by actual observation and through careful experiment. In some situations compulsion and restraint may be, undoubtedly will be, necessary, but even in the early stages of education the emphasis should be put on intelligent self-criticism and strenuous co-operation rather than on obedience, hardships and asceticism.

One of the excellent features of the book is the author's view of the teacher's equipment. The study of ethics and politics is given the place of honour; considerable reserve is shown in the advocacy of psychological studies. Intelligent reading of eminent writers is emphasized. We see no reason why the good advice on the reading of Professor McDougall and the late Dr. James Ward—making sure that we know what they mean before we repeat what they say—should not have been extended to the reading of works on political and ethical philosophy. And we should like to see more writers on the theory of education alongside the philosophers, psychologists, logicians, poets, diarists and novelists. It may seem an impertinence, after the author's eloquent support of the values of society, to suggest that Tolstoy's *Pedagogical Essays* should be read by the student; they, at least, would bring home to him the force of the remark: "Everywhere the meaning which education has had for men has been determined by the meaning which society had for them." Biological studies are commended but are shown to have decided limitations. There is a very careful and suggestive list of books appended to the text.

The achievements of the book as a book are two-fold. It restores to a prominent place some aspects of education—particularly the social and religious aspects—that are apt to be overlooked in modern statements of educational theory. It clothes in more fitting habiliments some types of educational activity—notably academic and specialist studies—that are prone to deck themselves in a too gaudy dress and claim the chief seats at feasts. These are its lessons. Its gift to society may be fittingly expressed in a phrase of its own—"an influence penetrating and purifying."

W. J. McCallister.

Book Reviews.

L'Auto Education a L'Ecole : Jeanne Deschamps. Ed. Maurice Lamertin. (Brussels. Pp. 141.)

Mlle. Deschamps, after having been for some years Directrice of L'Ecole de L'Ermitage at Brussels, where she collaborated with, and was inspired by, Dr. Decroly [vide " La Méthode Decroly," by Hamaide Delachaux et Nestlé, Neuchatel, Paris], was invited to take charge of L'Orphelinat Rationaliste of Brussels. Here she endeavoured to apply the Decroly method, described as the " Method of Life," to the education of primary scholars. The result of her efforts was to establish still more firmly her faith in auto-education, and in this book she describes her system, ably vindicating her belief, and giving suggestions for the application of auto-education methods to the teaching of ordinary subjects of the curriculum.

She presents in the early chapters a strong indictment of the ordinary class teaching methods, emphasizing the waste of time involved and the undesirable results, mental and moral, produced when, on the one hand, the quick-thinking members of a class must mark time, or, alternatively, when the slower scholars must accept, without adequate time to arrive at the required results for themselves, the suggestions of others. One would like to believe, however, that her sketch of class-questioning, when the child must think on no other lines than that desired by the teacher, is a little exaggerated or, at least, out of date.

The author has had opportunity for ample observation of young children, and it is on her realization of the way they seek experience and obtain knowledge for themselves that she bases her plea for a continuation of this " self-education " during school life. Whilst appreciating to the full the services rendered to education by Dr. Montessori in her plea for the freedom of the child and her insistence on independent work, the author takes exception both to her choice of subject matter and to her method of teaching, stating that it would be more logical (and might she not have added psychological ?) for children to learn the facts of nature by experience, and to perform necessary sense exercises in relation to natural objects, than to be given pentagons, cones, letters, etc. One would welcome someting more emphatic than the writer's modest query as to the relative values of an ability to read, write and perform operations with numbers up to ten, versus observations on plants, animals, sea and sky, walks in country or forest, leading to a real knowledge and appreciation of nature.

Mlle. Deschamps emphasizes the fact that in the natural order of things the adult is practically unable to understand the child mind ; this leads to the child both at home and at school being hedged in by orders, prohibitions, and threats, to comply with which he must exercise a control not natural to his age, thereby endangering his future development.

Having distinguished between knowledge we can obtain for ourselves, and that for which the help of others is necessary, the author suggests that this necessary help need not be in the form of actual teaching, but should, rather, consist in putting the child in the way of finding out for himself.

Part II deals with practice. The method of teaching most subjects is to supply each child with cards, carefully prepared by the teacher, giving instructions for the performance of experiments and the writing of results, asking questions to be answered, or, in the case of the earliest number work, merely presenting pictorial problems, to which children must find out, write and illustrate the answer. Such home-made apparatus is familiar to many English infant teachers, who have adopted modified Montessori or auto-education methods ; but Mlle. Deschamps has worked it, perhaps, more systematically, applied it to a greater variety of subjects, and continued it later in the educative process. In this respect she finds herself at variance with Mme. Montessori, who says that as children grow older they need more help from the teacher. Mlle. Deschamps finds, on the other hand, that they are able, to a far greater extent, to help themselves.

The method of teaching arithmetic is in English schools so popular as to need no description. On practical points, however, two criticisms might be made : (1) The child who can easily add one and five will not have arrived at the stage of reading written problems ; the pictorial problem card would, therefore, be the only suitable one at this stage; (2) The advisability of allowing children to accept one large counter as being worth ten smaller ones is questionable, and the practice surely is contrary to the principles of the author herself. An intermediate stage seems to be demanded, such as, for instance, the familiar one of tying ten sticks up in one bundle, actually opening the bundle when decomposition is necessary. After some experience of this kind, the children may agree than one large article be accepted as worth ten smaller ones (French children's experience of coinage being helpful here).

Reading is taught by the method of Dr. Decroly—described as the " Méthode idéo-visuelle." One heartily welcomes this evidence in favour of something more psychologically sound than the usual methods in vogue in our infant schools. This method sets out from the whole phrase as starting point, writing is associated with it from the beginning, and a great point in its favour is that it can be related to the child's interests of the moment. The " book " is, of course, built up little by little. By this method Mlle. Decroly agrees that children probably take longer in learning to read, but that, she considers, does not matter; whilst, on the other hand, she asserts, they spell much better, because they learn to visualize words. She insists, however, that in using this method the teacher must not be in a hurry to secure the analysis of words and generalizations as to the functions of sounds. The apparatus used again consists of little cards containing (1) sentence and picture; (2) picture without sentence; (3) sentence without picture. One would welcome further details with regard to the working out of such a scheme.

The teaching of music is based on the same idea. Melody precedes the study of individual sounds, the words of a song are presented before the names of the notes, and children represent familiar melodies by drawing, and also invent melody pictures to fit given words.

An interesting feature of her system is the attention given to practical nature study, again inspired by Dr. Decroly and making use of the little cards of instructions. True, the writer seems to be on dangerous ground in speaking of " cultivating the faculty of observation," but what she actually does is give the children interests in things around, together with practice in purposeful observation and accurate reporting of results.

Whilst of opinion that grammar is taught too early in the child's life, the author, nevertheless, gives suggestions as to how, if it must be taught, this can again be achieved by similar methods to those adopted for other subjects. In connection with manual activities the little cards are again used for directing children and assisting them to find out for themselves how to construct the desired objects.

Mlle. Deschamps is guarded in the significance she attaches to the term " games," and whilst feeling that many of her so-called games would be better described as "exercises," one must admit the utility of them at the various stages for which they are suggested. They are designed to meet the needs of the child (1) who is acquiring new ideas; (2) who is practising a new-found ability; (3) who needs revision of ideas previously studied.

The book is welcome as an inspiring plea for auto-education, and as a useful practical guide in the application of the method for many subjects and for scholars of all ages.

L.E.S.

Mind: Its Origin and Goal: by George Barton Cutten. (Yale University Press and Humphrey Milford. Pp. xiii+212. 11s. 6d.)

This is an admirable discussion of the evolution of intelligence, in that not only a backward look but also a forward one is taken. The first eight chapters deal with physical and mental evolution, animal and human minds. In the ninth and tenth chapters the question, " Are we in danger of intellectual decline ? " is asked and answered. The tenth and last chapter makes suggestions as to what future changes we may expect.

It is an exceedingly difficult task extremely well accomplished. The writer is guarded in his statements and though he takes up and maintains a definite standpoint from the beginning, he succeeds in putting forward his views undogmatically. The book is thoroughly interesting and thought-provoking, and though it is written in a clear, concise and somewhat popular style, it is obvious that the theories and speculations advanced are the outcome of a thorough grasp of the problems involved.

A useful reading list is given at the end.

F.M.R.

Common Sense and its Cultivation : by Dr. Hanbury Hankin. (Kegan Paul. Pp. viii+289. 7s. 6d. net.)

Dr. Hankin has written a most entertaining book, with stories enough to last a lecturer on psychology for a whole term. The subject is wider than might at first sight appear, for by " common sense " the author means intuition, the working of the " subconscious " mind ; it is opposed to reason and all conscious mental processes. Under various headings (*e.g.*, abnormal calculating powers, musical genius, the intuitive faculty of diagnosis possessed by some doctors, the " business instinct " often shown by captains of industry), Dr. Hankin illustrates the superiority of intuition to reason. Common sense decisions are the result of accumulated impressions, or of instantaneous perceptions, which have either been forgotten, or have never reached the conscious mind at all ; they are swifter, and frequently more sure, than decisions based upon reasoning. There is much here akin to certain views of Bergson and Freud—still more to the central thesis of Butler's " Life and Habit," that we really know only what we have forgotten that we know.

Unfortunately, however, when Dr. Hankin comes to deal with the cultivation of common sense he allows his thesis to run away with him : in the chapter " On Educational Systems " he puts forward the most fantastic theory of formal training that has surely ever entered the mind of man. He argues thus : If this invaluable common sense depends on forgetting, then the more we can forget, the better it will thrive. Hence (as in his earlier book, " Mental Limitations ") he finds great value in certain Oriental systems of education which consist of learning large quantities of uninteresting and unintelligible matter ; thus the Baniya caste in India are bred on " a system of mental arithmetic that makes the brain reel to contemplate " ; Indian Mahomedans and Chinese learn languages which they do not understand. Yet they become extremely adept at business. Similarly, the classical curriculum is praiseworthy, because it is (1) laborious, (2) uninteresting, and (3) soon forgotten ; on the other hand, it is not exhausting. " The facts described in this book give a clue to the value of formal discipline. Its value does not consist in its being dull or exhausting or monotonous. Such accompaniments of formal discipline must be avoided if it is to be used without ill-effects. Its use is that it causes the student to do with energy what he does not do with interest. Because the task is uninteresting, its data rapidly pass from consciousness to the sub-conscious mind. Thereby the mechanism for forgetting is stimulated. The facts learnt and forgotten are probably useless, but what is useful is that a habit is formed of rapidly putting data at the disposal of the subconscious mind where they are available for aiding in acts of subconscious judgment." Conversely, scientific education is harmful, because it " involves constant reasoning and is often highly interesting." Dr. Hankin finds an admirable illustration in the Indian Civil Servant. " The large number of subjects in the entrance examination and the high proficiency required in each effectually prevent the candidate from being specially interested in any one of them. Because he is uninterested he rapidly forgets what he learns. Within a few years of his arriving in India he has usually forgotten even the names of the subjects in which he was examined. He has acquired the habit of going through life without any special interests. He is uninteresting and uninterested." But he is extraordinarily efficient, and he can turn his hand to any job that comes along ; whereas if he has interests, even a hobby, " he is apt to be a failure as an administrative official."

Such is Dr. Hankin's extraordinary thesis. It seems particularly out of place in a book on common sense. Indeed (to follow the author's own theory), if he had reasoned less he would have avoided such absurdities.

In an excellent chapter, " Opposition to New Ideas," Dr. Hankin exposes the defence mechanisms adopted by those who find new theories unwelcome—and he thus skilfully disarms the critic. Perhaps no reasoned attack on his educational theory is required. If our ideal were to be the successful business man, the efficient "Robot," or even the Indian Civil Servant, then we might be willing to cut out all interest from education. Even so, one may wonder whether the business man, if he had used his reason a little more, would have got British industry into its present hopeless mess ; and as for the Indian civilian, Dr. Hankin rather gives away his case by saying that as one comes to know them " one discovers that the man who is interested in nothing is a level-headed young man who is equally interested in everything." Here, surely, we find the reason for his success : not that he has been trained to work against the grain, but that he has learnt how to find some element of interest in the most unattractive job. And, generally, to glorify the non-rational elements is surely dangerous ; for, while reason may lead you wrong, intuition, too, can let you down very badly, and you have no kind of check on it. Miss Bradby's " Logic of the Unconscious Mind " tells a very different tale from this book.

But, apart from its pedagogical corollaries, the book is well worth reading. As Dr. C. S. Myers remarks in his Foreword : " It is worthy both of expert and of popular consideration . . . it well merits general attention ; for it will make the reader think."

Several misprints should be corrected in a second edition. The most serious is that Lord Rayleigh's name appears throughout as " Raleigh." F.A.C.

The Adolescent Girl : by Winifred Richmond, Ph.D. (The Macmillan Company. Pp. xiv+212. 5s.)

" Dr. Richmond has produced a book on the adolescent girl which is the outcome of an extensive experience and which is addressed to the average educated mother." So says Dr. A. White in his introduction. As an answer to the question, " What ought the average mother to know of her daughter's experiences ? " the book strikes one as generous, since it provides an introduction not only to the general characteristics of adolescence, but also to the concepts of general intelligence, mental defect, and psychopathology. But as the outcome of an extensive experience it cannot compare, for insight or thoroughness, with the treatment of the same problems in Dr. Cyril Burt's " The Young Delinquent," or with the best chapters of Dr. Slaughter's " The Adolescent."

The book opens with an interesting review of the position of women through the ages, the author's thesis being that precedents for our modern recognition of the importance of adolescence are to be found in prehistoric times and in the customs of primitive peoples. Since, however, this early recognition extended to physiological changes only, " the adolescent girl as we now know her is a newcomer on the stage of history."

There follows a survey of the hygiene and physiology of adolescence, and an account of adolescent psychology in its normal and abnormal manifestations. Though Dr. Richmond states her belief that " It is Life, not sex, that bursts upon the girl's bewildered view at puberty—Life mysterious, alluring, beckoning to her from a thousand angles "—yet one feels that the author is at her best while keeping close to physiological considerations, and less happy when she leaves the open seashore of adolescence and attempts to explore those " quiet dimmed rivers," those " little pools 'mid happier hills "—more accessible, perhaps, to poets than to doctors—which the tide of adolescence floods and fills.

The adolescent world as set forth by Dr. Richmond is, in fact, a small and simple one. There are homosexuals and heterosexuals ; extroverts and introverts ; adolescents with short bodies and long limbs, or, alternatively, with long bodies and short limbs ; those who live for themselves and those who live for the race. One is tempted to remark that if these pairs of opposite terms are used as complementaries, as is apparently the case, then the distinctions which really matter—which give richness and variety to life and interest to adolescence—are still to seek. But such a criticism could not fairly confine itself to this particular book.

Dr. Richmond's chapter on " The Abnormal Girl " is comprehensive, her examples being drawn as freely from childhood and middle age as from adolescence. This is consistent with her view that adolescence is rarely the cause of abnormality ; rather, the occasion on which any incipient abnormality most clearly reveals itself. " The adolescent girl, as she stands before us with her face to the future, is what she is by virtue of her childhood." The causes of abnormality lie, in Dr. Richmond's opinion, immediately in misdirected instinct, but more remotely in the low level of general intelligence which is usually responsible for such misdirection. This emphasis on mental defect rather than, as so often, on temperamental instability, is striking. " The girl's primary intellectual endowment conditions everything we do for her and everything we may expect of her future." Hence the importance which Dr. Richmond attaches, throughout the book, to the testing and grading of intelligence ; hence, also, her fundamentally pessimistic attitude to her problem. " The psychopathic girl is a law unto herself, and baffles our most earnest attempts to understand her. . . . Frequently the psychopath's whole life is a struggle to assert her personality against overwhelming social odds. A comfortable adjustment is usually impossible." Dr. Burt, one feels, could give the troubled parent of such a girl more reason to hope again than can Dr. Richmond.

The author's more definitely educational recommendations resolve themselves into three. Firstly, sex teaching should be given before the onset of puberty. " Only a complete airing of the whole subject can satisfy the curiosity natural to the early teens. . . . In the majority of cases adolescence is too late." Secondly, opportunities must be provided for the sublimation of the sex instinct. " To help every girl find herself in creative work, express herself through some vocation in which she can take pride and joy, is the ideal we must hold before us." Thirdly, as a corollary, some system of vocational selection and guidance should be made available for girls leaving school.

One might note, in passing, that Dr. Richmond's first recommendation is not as yet universally accepted even by the younger generation itself. I read the chapter on " Training and Education " immediately after grappling with a student in training who came, flushed but determined, to say, " Why are we given sex teaching here? Surely because we are going to be teachers ourselves, not because it is any help to us personally? Such knowledge always comes as a shock, and the older we are the better are we able to bear it. And so far from it being a safeguard, I should think an innocent mind is the best protection of all ! "

To sum up, the average American mother has reason to be grateful to Dr. Richmond, but there is still room, at any rate on this side of the Atlantic, for a book which shall combine Dr. Richmond's sympathy and comprehensiveness of treatment with deeper insight, a lighter literary touch, and a readier fund of humour.

M.P.

Principles of Psychotherapy : by Dr. Pierre Janet. (Allen and Unwin. Pp. 322. 10s. 6d. net.)

No student of modern psychological medicine can afford to neglect the work of Pierre Janet, and the present volume is an important contribution to that part of his writings which bears most directly on general physchology.

The book is divided into three parts, the first dealing with the evolution of various methods of mental treatment, including Christian Science and Suggestive Hypnotism, the emphasis being on historical origin. The second discusses psychological facts and laws underlying these methods. Dr. Pierre Janet points out the inexactness of the records of many cases, and in particular the ignoring of many negative results. There is a suggestive though not altogether convincing discussion of the resemblance of results and symptoms of emotion and fatigue. As to suggestion, Dr. Janet's view practically amounts to this: that there is always lurking a tendency to a given action which suggestion only " fires off "—a familiar idea to the student of suggestion. " The essential part of treatment by suggestion," he adds, "is the provocation of automatic actions instead of superior and reflective actions." The suggestion that hypnotic trance is useful, even as a very decided though temporary change of mind, is interesting.

The third part of the book deals with conditions needed for successful treatment by the methods under discussion, and contains many points of interest for the teacher and parent, bearing, for example, to mention but one, on the question of discipline. Dr. Janet points out that the decisions of one in authority often set a patient free from " higher operations that demand great expenditure." C.W.V.

Education of Gifted Children : by Lulu M. Stedman. (New York: World Book Company. English Agents: Geo. G. Harrap and Co. Pp. 192. 7s. 6d. net.)

This book is an extremely interesting account of work done in the " Opportunity Room " in the training school of the University of California. The writer of the book organized this class in 1918, and she has here given us important case studies of gifted children, the methods and arrangements of the Opportunity Room, with many examples of the actual work done.

Briefly, the views and conclusions of the writer are: Enrichment of the curriculum is to be preferred to extremely rapid promotion; this is assisted by segregation of the gifted children in special or " opportunity " rooms; such education to be based upon individual differences. " The most important consideration for the gifted child is the curriculum."

The writer pleads for more research in connection with the education of these children and for co-operation between psychologists and educators.

As Prof. Terman says in an Editor's Introduction: " Normal pedagogy has certainly benefited from the pedagogy of defectives; it has far more to learn from the pedagogy of the gifted." E.C.C.

Instinct : A Study in Social Psychology : by L. L. Bernard. (G. Allen and Unwin, Ltd. Pp. 550. 15s. net.)

In this work the author, Professor of Sociology in the University of Minnesota, attempts to determine the nature and functions of instincts in relation to individual conduct and social organization and to discover the limitations of the instinct concept as an explanatory device.

The earlier chapters are devoted to the statement of the opposition between the instinctivists and the environmentalists, an account of the development of the nervous system in which copious references are made to the work of C. J. Herrick, and an attempt, after comparing many definitions of instinct to construct a satisfactory one. The author favours the limitation of the term instinct to any " inborn activity process which has remained intact, that is, which has not been re-made through the process of learning or of making new adjustments by means of the substitution of new stimuli or responses for the old which were inherited " (p. 84).

On this basis the author considers the relatively fixed modes of response of insects as typical instincts and maintains that instinct deteriorates in the higher animals, especially in man, in proportion as the increased flexibility of the nervous system tends to substitute habit organization for the instinctive.

To support this contention, appeal is made both to biological theories of development and to evidence of the effect of organic conditions in determining the development of the organism.

In succeeding chapters a number of " false instincts," *e.g.*, maternal, paternal, parental, play, fighting, are analysed to show the untenability of the instinct concept which they imply. In the next two chapters an attempt is made to show that emotion and the affective life in general are not exclusively instinctive in character, but that the acquired elements are dominant and directive.

The conclusion reached by Professor Bernard is that the control of the growth of human character should be approached from the standpoint of the content and organization of the psycho-social environment—the instincts being regarded as the original—not necessarily the immediate or the only starting points in the process.

No student of education is unaware of the importance of environment in determining the directions in which instincts and innate capacities can be modified and many will find themslves in agreement with the main purpose of this book, but it is necessary to recall the fact, which does not appear to have received adequate attention in this book, that the same environmental conditions appear to be followed by very different results according to the inherited natures of the individuals exposed to them. Further, the author does not seem to have faced the argument that the social environment which operates is prima facie the one which is in agreement with the innate qualities of its members.

Finally, one may doubt whether the author's limitation of the term instinct to the thousands of inherited mechanisms will prove as valuable as he suggests it is.

As a protest against a superficial explanation of behaviour in terms of instinct, involving the fallacy of the faculty psychologists, the book serves a useful purpose, and should help students of human behaviour to read critically modern developments of educational and social psychology.

A.E.C.

Biometrika : Vol. XVII. Parts III and IV. Pp. 201-479+i-iv. (Biometric Lab. and Cambridge University Press, 1925. Price 32s. nett.)

The last volume of " Biometrika " contains several papers of special value to workers in educational theory among a number of others which may be of service to them. Four of these former deal with correlation. Thus Prof. Yasukawa considers the correlation between u and w, where $u=\phi$, (x) and $w=\phi_2(y)$, and x and y are normal distributions with coefficients of variation of order 2 to 8. Then r_{uw} has the same value as r_{xy} to three decimal places, so that where we measure, say, ability, indirectly by u (this being a function of x, the ability), we have a correlation that for practical purposes gives us the correlations between the true quantities at the back of our measurements. This is possible under the conditions mentioned. We can apply this in the case of anthropometric measurements ; we cannot in economic (*e.g.*, frequency distributions of incomes, etc.). Can we use this in psychological measurements ? Miss Newbold calculates the partial correlations in several different cases by a variety of methods (biserial and product-moment, biserial alone, tetrachoric and product, tetrachoric and biserial, tetrachoric alone and the Pearson

*Q_5 and finds results that agree closely enough for all practical purposes; the editor points out that it is advisable always to use more than one method (*e.g.*, those mentioned, the mean sq. contingency, correlation ratio, etc.) to give confirmation and confidence in results. Mr. Rhodes give a particular skew correlation surface and points out that the Pearson method of ranks and grades (*vide* " Drapers' Company Research Memoirs," Biometric Series IV), so far only applicable to normal surfaces, applies also to this surface. Thus we get $r = 2 \sin \frac{\pi\rho}{6}$ where $\rho = \frac{12I,}{N^3}$ for a skew surface of normal marginal frequencies and parabolic regression lines. If the error be calculated on the assumption of normal correlation, where it is really slightly skew, it is never more than 10 per cent. and always in excess. Karl Pearson gives a formula for a new linear correlation ratio that does not, like η^2, involve a sum of squares of deviations that can never average out to zero.

The other papers that are of interest to the statistical psychologist are two relating to sampling. Dr. Splawa-Neyman gives, for a small random sample n taken from a finite population m, the formulæ for the frequency distribution of the sample (moments, βs and variance). Lastly, Mr. Tippett considers the case of the extreme individuals and range of samples taken from a normal population (corresponding to the case, for us, of the selection of, say, secondary school pupils from the population of all children). The chief results are:

(1) The smaller the sample the more widely does the distribution of the extreme individuals diverge from normality;

(2) Knowing the mean range of the sample and its size, we can determine the s.d. of the original population. This method is rapid and easy to apply, and gives better results when the samples are many and small than when they are few and large; the method is not so accurate as the method of moments or the Pearson method of ranking (*e.g.*, by quindeciles).

Tables are given, for $n=3$ to 1,000, in samples of size n taken from a normal population of:

(1) The probability integral of distribution of the largest individual in the sample;

(2) Mean range, in terms of s.d., of the samples.

The tables include the following:

Size of Sample	10.	100.
Mean of Sample	1.54	2.51
S.D. of Sample	.59	.43
Value of Extreme Individual occurring with a probability of 5%	2.57	3.28
1%	3.09	3.72
Mean Range	3 (about)	5.02
S.D. of Range	.80	.61
Correlation of First and Last Individual	.08	.007
Standard Error of S.D. of Normal Population by:		
Method of Moments	.22	.07
Quindeciles	.28	.09
Range—1 sample of n	.26	.12
,, 10 samples of n	.08	.04

Professor Westergaard gives some formulæ of value in vital statistics. It appears that the actuarial problem of " wastage " of members of the teaching profession due to causes other than death (*e.g.*, marriage in the case of women, superior economic attractions in the cases of men) may well be tackled by these. This is necessary as a safeguard against further misleading statements by the Board of Education (as, for example, in Memorandum 44) about the likely natural growth in the national salaries bill for teachers.

F.S.

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*See Phil. Trans. A 195 (1900). $Q_5 = \sin. \frac{\pi}{2} \frac{1}{\sqrt{1+k^2}}$ where $k^2 = \frac{4abcd\,N^2}{(ad-bc)^2\,(a+d)\,(b+c)}$

An Introduction to Experimental Psychology : by C. W. Valentine, M.A., D.Phil., Professor of Education in the University of Birmingham. Second Edition, revised and enlarged. (London : The University Tutorial Press, Ltd. 1926. 4s.)

Of recent years there has been a rapidly increasing tendency to introduce a course in practical psychology into the curriculum of those who are being trained as teachers. The lack of a good text-book has been seriously felt ; and for long the absence of a manual of experimental exercises was a still more serious drawback. Such a manual should be cheap, and well within the limited means of the elementary student. It should be available for large classes carrying out experiments in groups of twenty or thirty at a time. It should involve no costly apparatus, and should presuppose no special laboratory expensively equipped. In this country the only book which fulfils these requirements is Professor Valentine's lucid and convenient little volume.

The book consists of two main parts. The first part comprises a series of forty-five experiments. The instructions are clear ; the exercises can be carried out in class ; and practically all the apparatus needed is contained between the covers of the book. The choice of the experiments is admirably adapted to the needs of the student of education. It deals with such classroom processes as association, attention, imagery, and learning, mental tests and mental fatigue, the acquirement of skill, and the transfer of training. The experiments themselves, though simple, are often ingenious ; and are well calculated to bring out the essential principles of psychological method.

The second part deals with a discussion of the results obtained, and with their bearing upon the mental processes of the child in school. These latter chapters form an admirable summary of the essentials of educational psychology.

For the second edition the book has been completely revised in the light of more recent researches, and its chapters have been considerably extended. Tests of intelligence and of practical ability, the psychology of thought processes and the growth of mental concepts, the speed of reading and its improvement, the appreciation of pictures and of poetry, are among the subjects now dealt with at somewhat greater length. The book concludes with an admirable bibliography of selected references upon each of the topics treated. The whole is evidently the result of many years' experience in teaching educational psychology to students in the University and the training college.

It is the common notion that a course in experimental psychology cannot be undertaken without a room specially fitted as a laboratory, and without expensive electrical apparatus. Certainly for the student of education such things are luxuries rather than necessities. As Binet was so fond of insisting, the psychology of the school child can best be studied " with pen, ink, and a little paper." It so happens, however, that the simple experiments and the elementary technique that are most suitable for the student of education are also those which are best fitted for students who are commencing the study of general psychology. Hence this book may also be of much service to those who are following a course of pure psychology for its own sake. Professor Valentine's chapters may be warmly recommended not only to the teacher in training, but even to the isolated student who wishes to learn a little of modern psychology and has no laboratory but his own study and no teacher but himself and the text-book.

C.B.

The Sensory Basis and Structure of Knowledge : by Henry J. Watt, D.Phil. (Methuen and Co. Pp. xii+244. 8s. 6d. net.)

There has long been a need for some such book as that which is now presented to us, for experimental work in the physiology of the senses and in psychology has been going on so rapidly that one writing with authority and a sound critical sense should bring the results into some accord with one another. Dr. Watt achieved a large measure of success in reviewing so much in the limits of a book of this size. Unfortunately the weight of his handicap compelled him to be a little less lucid in places than a teacher of his experience no doubt would have desired, but the detailed references are of great assistance, and there are also some useful diagrams. The author treats of the structure of the sense organs, of the nature of sensations in general and of the integration of sensation leading up to perception and conception, and throughout the book there is a definite effort to relate its different stages to a theory of psycho-physical parallelism. Teachers and students of psychology will find "The Sensory Basis" very useful; it is the kind of thing that has been wanted for some time.

An Introduction to Psychology: by Hugh A. Reyburn. (London: Geo. G. Harrap and Co. Pp. 324. 7s. 6d. net.)

Dr. Reyburn, the Professor of Logic and Psychology at the University of Cape Town, has joined the ranks of writers of "An Introduction to Psychology." He regards, psychology as a "positive natural science," and his book is intended for the elementary student with no previous "knowledge of psychology or of philosophy." The book deals with the usual topics in a rather unorthodox sequence. In the main the writer's treatment is clear; occasional lapses from this clarity occur; the author sets forth the educational bearings of many of the principles enunciated; and, if the beginner carefully reads some of the books suggested for further reading with a critical estimation of some of the writer's statements, the book will serve as a useful introduction to the subject. The proof-reading is not above reproach.

Modern Thinkers and Present Problems: by Edgar A. Singer. (Geo. G. Harrap and Co., London. Pp. 244. 5s. net.)

The sub-title of this volume, "An Approach to Modern Philosophy through its History," indicates the real spirit and aim of the book. Professor Singer gives short accounts of the lives and teachings of seven philosophers, Giordano Bruno, Benedict de Spinoza, David Hume, Immanuel Kant, Arthur Schopenhauer, Friedrich Nietzsche and Josiah Royce. The author also writes on "Pragmatism and Progress," and concludes an interesting and suggestive volume with a "Retrospect and Prospect."

Elementary Psychology: by A. I. Gates. (The Macmillan Co. Pp. 594. 12s.) In THE FORUM OF EDUCATION, Vol. II, No. 3, the same author's "Psychology for Students of Education" was favourably reviewed. The present volume, similar in type to the former, is designed to meet the needs of the general student. It differs therefore in emphasis and content, but the viewpoint remains the same.

Geography in School: by James Fairgrieve, M.A. (University of London Press, Ltd. Pp. 364. 7s. 6d.)

This admirable book should be read by all teachers of geography. The author, beginning with his confession of faith that the function of geography is "to train future citizens to imagine accurately the conditions of the great world stage and so help them to think sanely about political and social problems in the world around," develops the methods by which this aim can be pursued in schools.

Considerable attention is given to the problem of orderly arrangement (Chap. IV—Chap. IX). It is noted that the chapters on maps are particularly valuable, the comments on the effect of the introduction of maps too early in the school course meriting careful attention.

The chapters on Relief, Material Aids, Lantern Slides, Home Geography, and the Organization of a Year's Work are full of useful suggestions.

An excellent bibliography of British books on the main problems of the teacher is given.

That there is a need for more trained teachers of geography is evident to all who are familiar with the rapid development of the subject in schools and Universities. This book will prove of value to all those who have the task of training teachers of the subject, even if it suggests that the teaching of geography is very difficult.

A.E.C.

The Charm of Teaching Children: by William Robb. (Gay and Hancock, Ltd. Pp. 196. 2s. 6d. net.)

This excellent little book has justly reached its second edition. It contains a series of chapters on various aspects of school life, all permeated by the spirit which its title indicates. The author writes after wide experience, with the kindly sympathy for children which such experience ought to bring. He writes, too, in non-technical language—a pleasant change from the jargon of most books on education, and he is always ready with an apposite anecdote or quotation. Every teacher would find encouragement in reading such a book, and most would find some useful advice on method—particularly on the teaching of English. But the value of Mr. Robb's book lies not so much in any details as in its atmosphere of cheerfulness and good sense—which will undoubtedly invigorate the tired and tedious teacher.

F.A.C.

Unified Kindergarten and First-Grade Teaching : by G. C. Parker and A. Temple. (Ginn. Pp. xv+600. 7s. 6d.)

The object of the authors is to show how the curriculum and methods of the kindergarten and first grade can be so unified that the children feel no serious break between the informal play activities of the babies and the more formal time tabled work of the junior school.

There are three main divisions of the book : (1) Unification, Purpose, Curriculum and Equipment ; (2) Types of Learning, as " Understanding social life, communication and expression, problem solving, recreation, forming civic-moral and health habits, and acquiring skill in using numbers, in reading and handwriting " ; (3) The general spirit of teaching and learning in the unified programme.

Most of the examples of teaching have been supplied by the teachers of University Elementary School of the University of Chicago and other experienced teachers who have been members of classes in the University.

To those who know very little of the freer activities of the modern school this book may prove suggestive ; to those who have entered into the spirit of Froebel's work, and have broken away from the formalized apparatus and procedure, recognizing that " the letter killeth, the spirit maketh alive," the book does not offer new material. The notes of spontaneity and joy are not heard through the detailed descriptions of lessons, and the reading proves heavy, taken, so it seems, from the files on the teachers' desk rather than from the playing child in the heart of the business of play.

W.A.B.

University Reform in London : by T. Ll. Humberstone, B.Sc , A R.C.S. (Allen and Unwin. Pp. 166, plus Appendix, pp. 26. 7s. 6d. net.)

Anyone who undertakes to write a comprehensive history of London University enters upon a task of great difficulty. No University in the kingdom is comparable with London in its complexity, nor has any University the same problems to face. Its numerous institutions, its lack of a real home of its own, and of foundational endowments, and yet the great services it renders, as no other University does, give it a peculiar claim for attention. Now that this University is approaching its Centenary, Mr. Humberstone has set out its story from the beginning ; he describes in considerable detail the great work the University has done ; the vexed question of the site for its future home is discussed ; and the final chapter deals with the policies involved in reconstitution. Mr. Humberstone has charted the rocks upon which agreements split ; we find among them those of External and Internal Examinations and Degrees, Control by the Teachers, and the size and distractions of a great metropolis ; but although the outlook for this University is none too rosy, the author prophesies a great future provided its problems are dealt with in a proper spirit of loyalty and service.

The book is a useful contribution to the history of University development.

A.P.B.

A Key to Language : by Isabel Fry. (Sidgwick and Jackson, Ltd. Pp. 122. 3s. 6d. net.)

If English grammar is worth teaching at all (a point which Miss Fry takes for granted), then it could not be begun better than by the ingenious method explained in this book. The method consists of the analysis of sentences by means of graphic symbols, no abstract terms whatever being used. It is thus superior to other apparently similar devices, where the symbol is merely added to the technical terms—subject, predicate, etc., for children learn the relationship between different parts of the sentence without being confused by terms which the most eminent grammarians find difficult to define. It is not until the fourteenth lesson that such terms are introduced—when a need of some nomenclature is felt. Another excellent feature is that, from the first, consecutive passages are chosen for analysis, instead of the detached and meaningless snippets usually found in grammar books. By easy gradations the examples pass from simple pieces of prose to involved passages from the poets. It may be added that Miss Fry has tested the value of her method during twenty years' experience.

F.A.C.

The Child at School : by Sir Leslie MacKenzie, M.D., LL.D. (Faber and Gwyer. Pp. 232. 2s. 6d. net.)

This is an excellent member of a valuable series of handbooks appearing under the title : "Modern Health Books," and edited by Professor D. Fraser Harris, M.D. The name of the author is sufficient to guarantee a thoroughly scientific, and yet broadly humane attitude towards the problems he deals with, and a psychological knowledge much greater than that usually revealed by the members of the medical profession.

Sir Leslie MacKenzie discusses first such questions as the social and economic environment of the child—some of his descriptions of housing conditions being profoundly moving. In considering the question : "When Should a Child go to School," he rightly points out that much depends on the nature of the school and on the intelligence of the child.

The subjects of clinical tests, feeding experiments (like that at Bradford), and the development of medical inspection, receive enlightening treatment as fully as could be expected in a small handbook.

The two brief chapters on "Three Points in Psychology" and "The Testing of Intelligence" seem somewhat to spoil the unity of the book, and are necessarily very sketchy.

The Child's Attitude to Life : by C. W. Kimmins, M.A., D.Sc. (Methuen and Co., Ltd. London. Pp. 154. Price 5s.)

In this book Dr. Kimmins has given many illustrations of various interests and attitudes of children at different ages, especially as they are exemplified by the records made by children of their favourite stories, including fairy stories, humorous stories, stories of the war and of air raids, and, incidentally, the records of their dreams which Dr. Kimmins groups with fairy stories. The connecting psychological links and exposition are slight and of a popular nature, but the main value of the book lies in the copious records of ideas which have interested the youthful mind. Many of the stories certainly make entertaining reading. One could wish that at least in an appendix, Dr. Kimmins had given more exact statistical records of his methods of investigation.

A Guide to the Study of Occupations : by F. J. Allen. (Humphrey Milford. Pp. xv+197. 10s. 6d.)

This book provides a clearly arranged index and useful critical bibliography of the literature on a great variety of occupations. It is written from the point of view of the teacher, the student, and the general reader, and succeeds in its avowed purpose of supplying data suitable for "life-career classes in the schools" (of the United States). There is, however, practically no reference made to researches dealing with vocational guidance based on psychological tests, and the book is consequently of limited value to the psychologist concerned with job analysis, or with the psychological measurement of abilities and disabilities of occupational significance.

Cambridge Lessons in English : by George Sampson. (Cambridge University Press. Book II 1s. 10d. ; Book III 2s. 6d.)

This series of books, designed to assist pupils from eight to fourteen years of age to obtain command of simple expression, has the great merit of being arranged according to a scheme which enables them to acquire the art of grammar.

Pedagogues who demand formal definitions of grammatical terms will be disappointed with these books, but good teachers will find them valuable both for the skill with which the matter is presented and for the exercises, which are many and varied.

The English Way : by B. L. K. Henderson, D. Litt. (Lond.). (Macdonald and Evans. Pp. 362.)

This book, which has reached a second impression within twelve months of publication, is designed, apparently, for use with commercial students who are preparing for examinations. Teachers will find this book more stimulating than many books written for a similar purpose. One may ask if the commas at the end of a quotation are inverted ? (p. 112), and p. 144, is the paraphrase of psychology as "the search for motive in what we do by instinct" seriously meant ?

Teaching Science in Schools : by John Brown. (London : University of London Press. 170 pp. 3s. 6d. net.)
This little book, written by an Inspector of Schools under the London County Council, should find its way into all training colleges, and it should be of value to many harassed teachers in primary schools. Science teachers in secondary schools might derive much benefit from a careful perusal of its pages. The keynote of the book is to be found in the opening chapter : " I wish to make no special claims for the teaching of science to the exclusion of other subjects now generally taught. It takes its place side by side with them as an essential element in one's education." Particularly useful chapters deal with " Some Practical Suggestions" and " What Should We Teach." The writer enters a plea for the teaching of Astronomy, and gives a valuble though diffuse list of books for the science library. Some statements of the author provoke discussion ; this is a valuable feature of the book. There was a real need for an English book on science teaching. This volume, although not meeting the demand entirely, provides a useful handbook of an elementary nature.

A Pedagogue's Commonplace Book : arranged by Edith Rowland. (London : J. M. Dent and Sons, Ltd. 5s. net.)
Miss Rowland has sought out and arranged " Extracts from works written in the mother tongue by men of the sixteenth and seventeenth centuries : for the most part ' men notedly known for their earnest endeavours to promote the welfare of more profitable learning in English schools.' "

These extracts are gathered together under particular headings—*e.g.*, " Of Schoolmasters and their Calling " ; " Of Teaching " ; " Of the Education of Women." Together, they give us " a slight record of educational thought and aspiration in Tudor and Stuart England."

Miss Rowland has earned the gratitude of all students of the " History of Education " by her labours as represented by this volume. And some of those who look askance at such a study may with profit examine this book, for many are the anticipations here found of much that is supposed to be essentially modern both in aims and methods of teaching.

British Drama : an Historical Survey from the Beginning to the Present Time : by Allardyce Nicoll. (Harrap and Co. Pp. 498. 12s. 6d. net.)
In this scholarly volume, Professor Nicoll traces the development of British drama from its earliest origins in the Middle Ages, down to the work of living authors (the last of whom are given over a fifth of the book). The author is concerned (as he says) with " tendencies " rather than with " individuals "—though the book affords also a fairly comprehensive study of individual playwrights, at least as participators in the general development. The subject is treated in intimate association with a study of the theatre and the type of audience of each period. The whole work reveals not only the erudition, but the taste and judgment of the author.

The book contains many admirable prints, and the publishers are to be congratulated on the general appearance of the book. A full index also makes the work a most valuable book of reference.

A First and a Second Book of School Celebrations : by F. H. Hayward. (P. S. King and Son, Ltd. Pp. 167 and 133. 5s. net each.)
The principles underlying the school celebration are now well-known, both from these books (which were published in 1920) and from the introductory volume, " The Spiritual Foundations of Reconstruction." Dr. Hayward has now added a number of celebrations, which may be obtained from him in pamphlet form at 87, Benthal Road, N.16. They include two Service Celebrations (" The Home " and " London "), two Recitals (" The Book of Job " and " Samson Agonistes "), one on India, and the following Memorial Celebrations : Akhnaton, Isaiah, St. Joan, Leonardo da Vinci, Columbus, Milton, Cromwell, Robert Owen and William Blake, Wordsworth, Shelley, Florence Nightingale, Abraham Lincoln, and Dickens.

Class Singing : by W. G. Whittaker. (Oxford University Press. 6s. Pp. 136.)
This is a book which all teachers of music in schools will recognize as meeting a definite need. The teaching of time and tune, ear-training, the problems connected with breathing, voice production and pronunciation, as well as kindred matters of importance in the musical education of children, are dealt with in a concise and interesting manner. A list of songs which will be of practical use is appended.

Armour and Weapons in the Middle Ages : by the late Charles H. Ashdown. (G. Harrap and Co. Pp. 220. 7s. 6d. net.)

This handy little book is as useful in its way as the same author's "British and Foreign Arms and Armour" (now out of print). It gives a concise survey of the subject to the seventeenth century. There are nearly 200 illustrations. Glossary and Index are both excellent. The bibliography would have been improved by annotations, and by the addition of an English Counties section, including, for example, mention of such valuable monographs as Mr. Chatwin's "Warwickshire Effigies" in the Birmingham Archæological Soc. Transactions for 1921 and 1922 ; and one would have welcomed an Appendix giving fuller lists (there are a few names at the beginning of each chapter) of the more important brasses and effigies in each period or in each English county. But this is, perhaps, too much to expect in a book which the preface modestly describes as being for "the young student" or "the man in the street."

The Cinema in Education : edited by Sir James Marchant, K.B.E., LL.D. (George Allen and Unwin, Ltd. Pp. 159. 7s. 6d.)

This is the report of the psychological investigation conducted by special subcommittees appointed by the Cinema Commission of Enquiry established by the National Council of Public Morals.

The research undertaken provided some evidence in favour of adopting the cinematograph method of teaching for those subjects which come within its scope. A plea is, however, put forward that the method should be supplemented by lecturettes at successive stages in the presentation.

Also it is strongly advised that those producing films for educational purposes should obtain "the co-operation of those who understand the working of a child mind."

One-Act Plays to To-day (Second Series): selected by J. W. Marriott. (Harrap. Pp. 276. 2s. 6d.)

The first series of "One-Act Plays of To-day," which were selected and published as an experiment, filled a felt need, and the second series ought to prove equally welcome.

It consists of twelve plays by modern authors, most of whom were not represented in the former collection. The only type of work omitted is pure farce, which, as the foreword says, is less readable than "actable."

The volume is very readable and will, no doubt, be welcomed not only by that public which enjoys reading one-act plays, but also by teachers and others on the look out for short "actable" plays.

A Concise History of Britain : by Cyril E. Robinson. (Methuen. Pp. 479. 5s. 6d)

This is an abbreviated version on conventional lines of the same author's four vol. "History of England." About half the book is given to history from 1750 to 1921. Condensation has, perhaps, not worked quite fairly in the early part ; there are, for example, four pages on the Hastings campaign, whilst on the other hand there is no mention of Edward I's legal reforms. But, on the whole, all aspects of history receive adequate treatment. There are numerous excellent maps and plans, but no other illustrations.

College Chemistry : by L. C. Newell, Professor of Chemistry, Boston University, Mass. (D. C. Heath and Co. Pp. 645.)

This is a text-book of wide scope and freshness of treatment. It pays special attention to industrial and every-day aspects of chemistry throughout, and touches at appropriate points on the historical development of chemistry. It is admirably clear, contains a very useful index, and many useful illustrations and diagrams.

The Year Book of the Universities of the Empire, 1926 : edited by W. H. Dawson, and published for the Universities Bureau of the British Empire. (G. Bell and Sons. Pp. 791. 7s. 6d. net.)

This handy and useful work of reference gives the gist of the information contained in the 50,000 pages of the calendars of 67 Universities. Its lists of the teaching staffs are complete up to date.

An Economic History of England, 1066-1874 : by Charlotte M. Waters. (Oxford University Press. Pp. 610. 7s. 6d. net, or, in two parts, dividing at 1750, 4s. each.)

This book is meant for the higher forms of secondary schools, and is for the most part "based on the various standard histories already written," and embodies the results of the most recent researches. As such it is an admirable work, full in treatment, sound in arrangement, and attractive in style. It is handsomely produced, and has over 200 illustrations.

The Measurement of Achievement in Geography : by Mendel E. Branom. (The Macmillan Co. Pp. 188. 5s. 6d.)

This little book gives an informative account of experimental work carried out by the author with the help of many students in the Harris Teachers' College, St. Louis. Care is taken to show that geography tests should measure achievement both on a problem and on a memoriter level. Many examples of tests are given, and teachers are advised how they can acquire skill in devising objective tests to meet their own needs.

The Appreciation of Music by Means of the Pianola and the Duo-Art : by Percy Scholes. (Oxford University Press. 5s. Pp. 155.)

The value of this book to individual readers will depend on the opinions held as to the advisability of employing any instrument of the pianola type for the interpretation of orchestral music. To those people who regard such a proceeding as justifiable, these lectures, already delivered over the wireless by Mr. Scholes, will give useful information. There is an appendix on the playing of the Pianola and the Duo-Art by Mr. Reginald Reynolds.

Causeries Caran d'Ache : by W. H. Anstie. (Bell. Pp. vi+146. 3s.)

This is an extremely attractive book, designed for use with middle forms. It contains 112 amusing drawings by Caran d'Ache, grouped so as to illustrate several series of incidents ; while on the page opposite to the drawing is a list of French idioms and expressions intimately connected with and explaining the pictures. The stories are amusingly indicated, and this, combined with the drawings, should make the book very pleasant to the users.

Le Pari d'un Lycéen : by J. Chancel. (Ed., Wenger.) Pp. vi+146.
Contes Choisis : by A. Arène (Ed., Hedgcock.)
(Sidgwick and Jackson. Series : "French Texts of To-day.")

These two books would serve very well as reading books for boys of middle and upper forms. The subject matter, especially of the former one, is modern and interesting, and affords good examples of everyday conversational French. Adequate notes are provided.

Stories of the Birds from Myth and Fable : by M. C. Carey. (Harrap. Pp. 192. 5s. net.)

A collection of delightful stories, full of interest for young children, and providing a link between nature study and literary interests. The book is well printed in large type and the colour illustrations by H. MacNicol are admirable.

A Text-book of Free Composition in French : by H. J. B. Wanstall. (Harrap. Pp. 118. 2s.)

A series of exercises in free composition, leading from story-writing from pictures, studies of narratives, paraphrase of verse, etc., to original composition and correspondence.

Riquet : by Anatole France. (Ed., Boyson.) (Oxford University Press. Pp. 194. 1s. 6d.)

Upper forms would find here a pleasant introduction to the works of Anatole France. The text is followed by good notes and vocabulary, the whole volume being very well produced at an extremely moderate price.

Voice Training in Speech and Song : by H. H. Hulbert. Second Edition. (London : W. B. Clive. Pp. xiv+100. 2s. 3d.)

This useful handbook on speech training has been revised and some new material added so as to bring the book up to date. The emphasis placed on rhythm adds value to a book which has already proved its worth.

University Tutorial Press

AN INTRODUCTION TO EXPERIMENTAL PSYCHOLOGY.

By C. W. Valentine, D.Phil., M.A., Professor of Education in the University of Birmingham. Second Edition. 4s.

In the new edition the book has been considerably enlarged, and completely revised in the light of recent investigations. Important new sections and additional experiments are included. The work should prove of special interest to members of the teaching profession and of service to all students of general Psychology or its specific branches.

HISTORY OF ELEMENTARY EDUCATION IN ENGLAND AND WALES FROM 1800 TO THE PRESENT DAY.

By Charles Birchenough, M.A. Second Edition. 6s. 6d.

In the new issue the book has been considerably enlarged in order to treat in greater detail the developments of the last twenty-five years.

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An introduction to the subject of Educational Psychology, in which a clear account is given of the development of child mind so far as it is understood. The new edition contains a comprehensive chapter on the " New " Psychology.

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THE FORUM OF EDUCATION.

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The Forum of Education.

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The Influence of Practice in Mental Tests.[1]

By C. S. SLOCOMBE.

INTRODUCTORY.

In view of the extent to which intelligence tests are used at the present time, in assisting ordinary school grading, in the selection of scholarship awards, and in selections for appointments, it is of the utmost importance that the effects of practice in the working of these tests should be known. The particular virtue of these tests is that they are supposed to measure intelligence, and that the measurement is, as far as possible, exact, *i.e.*, uninfluenced by disturbing factors. One factor which does undoubtedly affect results, but the precise effect of which is unknown, is the varying amount of practice which pupils receive prior to entering the examination room. It can fairly safely be assumed that the majority of teachers, who are preparing examination pupils, do give their children practice in working mental tests, but it cannot be assumed that the pupils on entering the examination room are all in the same stage of practised ability. It is obviously impossible to specify the exact amount of practice that shall be given, and so it is necessary to devise some means whereby the candidates may be placed on a basis of equality in this respect.

The investigations here described (part of a more comprehensive research into the methods of improving tests) throw some light on the influence of practice, and indicate possible methods of making tests more effective measures of intelligence.

PART I.—INFLUENCE OF PRACTICE WITHIN THE TEST.

Scheme of Testing.

Eight different test forms:

(*a*) Analogies,
(*b*) Opposites,
(*c*) Classification,
(*d*) Directions,
(*e*) Effect relations,
(*f*) Synonyms,
(*g*) Narrative completion,
(*h*) Reasons,

together constituting a test were applied twice to eight groups of children, about 30 in each. On the second occasion, although the form remained the same, the material (words) was changed, the interval between the two testings varying with the group, thus:

Groups 1 and 2: interval between testings, three months.
,, 4 ,, 8: ,, ,, one month.
,, 3 ,, 7: ,, ,, one week.
,, 5 ,, 6: ,, ,, one day.

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[1] From the Psychological Laboratory, University College, London.

The purpose of the scheme required that the same pair of test-forms should be placed in different positions in the series. Then comparison of the correlation between the members of any such pair (say AB, Analogies and Opposites) in these different positions was expected to show the existence of any effect due to position in the test.

But it is obviously impossible to arrange the forms in these various positions for a single group of children without introducing other factors as practice, etc. To avoid these it was found necessary to test the said eight groups, the test-forms applied to each group being the same, but varying in their arrangement from group to group. A cyclic order was devised:

Sequence.	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8
1	A	C	E	G	H	F	B	D
2	B	D	F	H	A	C	E	D
3	C	A	G	E	C	A	G	E
4	D	B	H	F	F	H	D	B
5	G	E	A	C	E	G	C	A
6	H	F	B	D	D	B	H	F
7	E	G	C	A	B	D	F	H
8	F	H	D	B	G	E	A	C

For each group the order of the eight forms was the same in the second test as in the first.

For the different groups the orders were so arranged that in any set of positions four pairs of forms could be found. This arrangement was made in order that for each position the correlations between the members in each of the four pairs could be averaged. If only a single pair of forms had been provided for each set of positions, any change of correlation with varying positions might have arisen from the variation of children. But when four pairs in a set of positions are provided, then each average compared will be obtained from correlations from the same groups of children and the comparison becomes legitimate.

DESCRIPTION OF TESTS.

The test-forms used were selected because they have been shown by psychologists to have a high " intellective saturation."[1] Care was taken in the choice of material to obtain equality in the difficulty of the two tests, though in each sheet of each test the material was graded so that difficulty increased as the testing proceeded. The instructions for each sheet were set out at the foot of the preceding one, and a definite time (half a minute) allotted for the study of each instruction, so that the results should not be influenced by differences in time devoted to the reading of instructions.

The time allotted to each test was 3½ minutes on first testing, and 2½ minutes on second testing. Each testing was preceded by 25 minutes' teaching of the procedure for all forms. No forepractice, in the proper sense of that term, was given. The teaching of the test-forms was given in the order in which they would appear in the test.

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[1] *Jour. Abnormal Psych.*, 1914. (Hart and Spearman.)

The groups of children tested were, as far as possible, selected on the basis of uniformity of race, environment, age (11-12 years), sex, and time of testing. They were boys attending L.C.C. schools in the East End. No attempt was made to equalize the groups on the basis of ability, equality in variability being desired in all groups rather than equality in ability.

TREATMENT OF RESULTS.

The scores in the individual test-forms were correlated (by the product moment formula) in pairs, AB, CD, EF, GH, in each of the positions occupied; then coefficients of pairs in similar positions were averaged as shown in the table below, which is illustrated by Fig. 1.

TABLE I.

Showing correlation between pairs of forms, when they occupy different positions in the series. (The numbers in brackets indicate the group from which the coefficient is taken.)

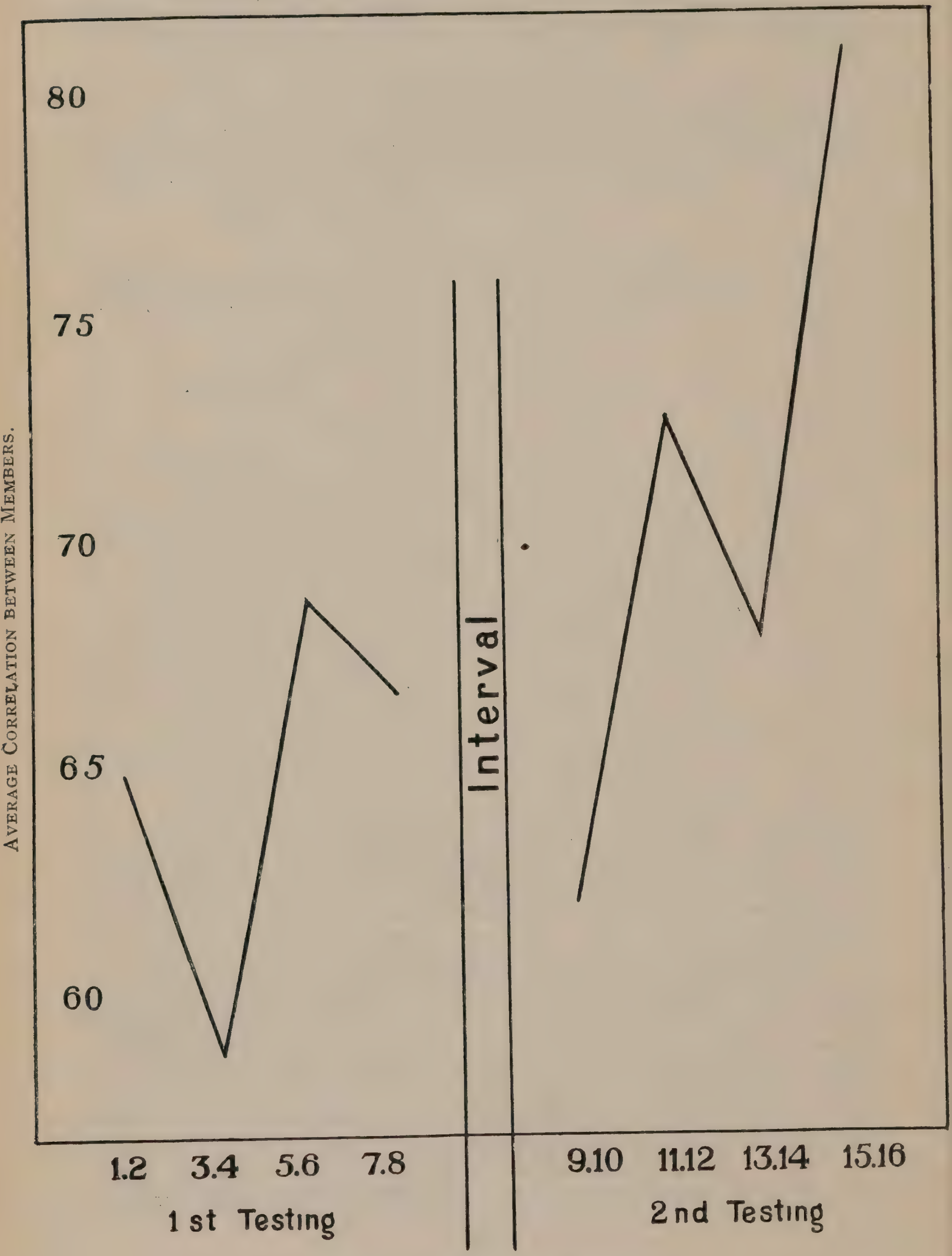
	FIRST TESTING.				SECOND TESTING.			
Position in Series	1.2	3.4	5.6	7.8	9.10	11.12	13.14	15.16
Pairs.	CORRELATION BETWEEN MEMBERS OF EACH PAIR.							
AB	.75 (1)	.62 (2)	.74 (3)	.55 (4)	.56 (1)	.70 (2)	.79 (3)	.80 (4)
CD	.62 (2)	.65 (1)	.65 (4)	.61 (3)	.43 (2)	.82 (1)	.71 (4)	.68 (3)
EF	.65 (3)	.53 (4)	.73 (2)	.82 (1)	.71 (3)	.74 (4)	.65 (2)	.88 (1)
GH	.58 (4)	.59 (3)	.66 (1)	.72 (2)	.80 (4)	.66 (3)	.57 (1)	.90 (2)
Average	.65	.59	.69	.67	.62	.73	.68	.81

The most notable feature of these results, as illustrated, is the fact that the correlation between a pair of forms varies with their position in the series, and that generally the later they are placed the higher is the correlation. (No notice has been taken of the fact that the interval between testings varied from one day to three months, because it was found that in this test the interval had no effect in causing variation, *i.e.*, that the reliability was as high (.95) after three months as after one day (.94)).

What is the explanation of this increasing correlation as the test proceeds? Professor Spearman's well-known Theory of Two Factors offers a suitable one. His theory states that a person's ability in any performance, such as a mental test, may be resolved into two factors: (*a*) his general ability or "mental energy" (central intellective capacity—BURT) to do any intellectual work under any circumstances, termed "g," and (*b*) one or a number of factors specific to each performance, "s." It is desirable that a test should measure "g," uninfluenced as far as possible by "s." The extent to which it does so is shown by high inter-correlation of elements in the test, and is termed the intellective saturation.

FIG. 1.

Showing that the value of test-forms, as measures of Intelligence, varies with their position in the Test.



POSITION IN SERIES OF TEST-FORMS.

It seems, then, that when a subject is first presented with a test, he takes some time to become habituated to the whole process. The lay-out of the tests, the atmosphere of the test room, the voice of the strange tester, the method of indicating response (particularly in that he is required to indicate correct answer by x, when he has always been taught that his symbol signifies error) are all new and strange experiences. But these new experiences are specific to the occasion, that is, specific factors. And the result on the test-forms worked under such general conditions is a lowering of the intellective saturation. (It is obviously possible for tests or test-forms to measure the same " g," but to vary in their efficiency as measures.) But when the subject becomes habituated the distractions cease to distract, and, as indicated by the rising inter-correlation, the intellective saturation increases.

It might be said that the subject has a certain definite amount of mental energy, and that during the early stages of the test some of this is used in paying attention to the distractions, but that as he becomes habituated he concentrates all his " g " on the essential part of the test. Now the extent to which this distraction affects scores, and the rapidity with which its effect wears off, might be expected to vary with different individuals, and to be general, i.e., affect scores in all forms equally. It is found, however, that this is not the case, but that the amount of lowering of score due to distraction is specific to the particular test-form.

Practical Conclusion.

In view of the preceding results, it is suggested that in tests of any importance 25 per cent. of the test time should be devoted to forepractice, applying the tests under proper conditions. This section would, however, not be marked ; or, if marked, the scores would not be included in the total. This forepractice is distinct altogether from any period devoted to teaching the methods of working tests, either by class teacher or mental tester.

An alternative method of improving tests would be to make sure by previous testing on a small number that the early tests (shock absorbers) are the easiest ones, and that difficulty increases as the test proceeds. (For example, Analogies is a difficult test for all under 14, and should be placed near the end ; Opposites, on the other hand, is simple, and might be placed first.)

PART II.—INFLUENCE OF PREVIOUS TESTING.

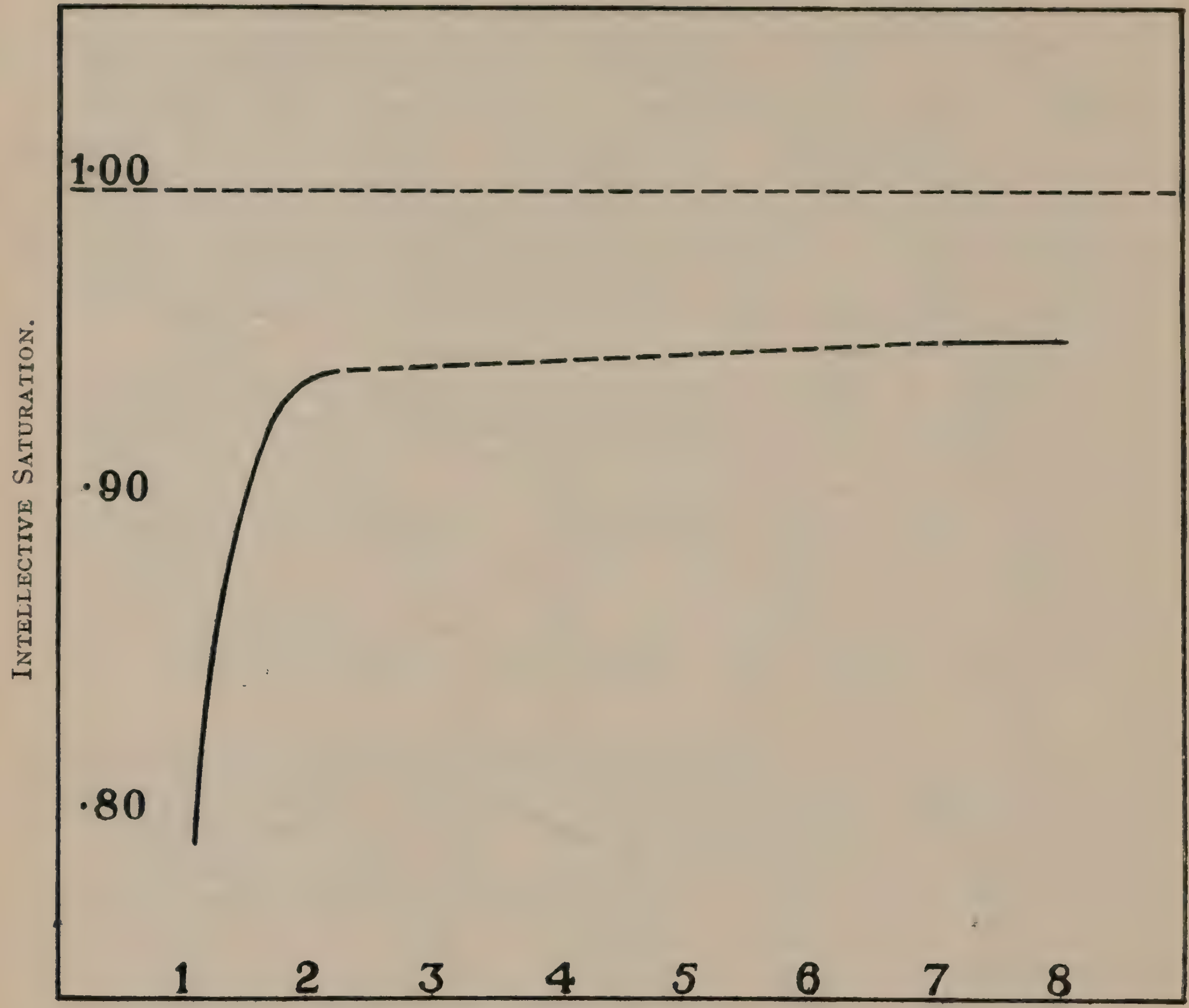
As showing the effect of previous testing the following results are illuminating :

A group of 75 boys was tested eight times, at intervals of one week, with the following test forms : Analogies, Dot Patterns, Reconstruction of Pictures, and Cancellation of Groups of Seven Dots. The intellective saturation of the combined test was then obtained for the first, second, seventh and eighth performances, these giving longest intervals between testings. The results, which are illustrated in Fig. 2, were :

First testing : intellective saturation, .79.
Second ,, ,, ,, .94.
Seventh ,, ,, ,, .955.
Eighth ,, ,, ,, .96.

Fig. 2.

Showing rise of Intellective Saturation (almost to maximum in second Test.)



No. of Test in Series.

This figure very strikingly indicates the quickness with which subjects become habituated. Care must be taken not to interpret this figure as indicating a rise in scores ; it indicates, rather, the extent to which the scores were due to intelligence—the particular function which the tests were designed to measure—and the rapid elimination of many specific factors.

It will be seen that there was a large increase in efficiency on second testing, but very little after ; in fact, it would seem that the test reached almost its maximum possible value at this test. Assuming that this result is general—it agrees with many results published in America[1]—it seems that if two tests be given, and the first be regarded as purely fore-practice, and the score neglected, then the second test will be (as far as is possible with that particular test) one of intelligence, but little influenced by other factors.

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[1] *Jour. Exper. Psych.*, 1922. (Thorndike.)
Jour. Educ. Psych., 1913. (Hollingworth.)
Psych. Rev., 1914. (Hollingworth.)

It is generally admitted that intellectual ability is determined innately, and cannot be improved. All that the class teacher who teaches tests to his class can do is to habituate the child to the process and methods of testing, so that it will use all the mental energy it possesses on the problems in hand. But he cannot by teaching increase the amount of that energy.

PRACTICAL CONCLUSION.

If, then, as is shown by these results, the second test is one of intelligence almost solely, the scores cannot be much influenced by the amount of previous habituation which the child may have had. Hence, in this test, the child who has not been coached in the methods of testing will not be at any serious disadvantage in relation to the child who has.

In very important tests, then, such as scholarship selection, it is suggested that two tests be given, at an interval of not less than one day, exactly similar, except for changed words or material; and that the results of the second test only should be regarded. This would eliminate the handicap against the child who has had little or no experience of mental tests.

SUMMARY.

(1) The effect of varying amounts of practice received by children prior to their being tested for intelligence is discussed.

(2) It was found on investigation that the earlier test-forms in a test are impaired in their efficiency by the lack of habituation to the conditions; it is therefore suggested that an adequate amount of fore-practice should be given before each occasion of testing.

(3) It was also found that if children be tested twice, with similar tests, the first test is influenced by varying amounts of practice received, but that on second testing all disturbing factors are reduced to a minimum. It is therefore suggested that, in important cases, two tests should be given, the marks obtained in the second test only being taken into account.

The Illusion of Warmth Test for Suggestibility.[1]

By JANET H. LODGE.

If you have read *Mr. Punch's Summer Number* you will find there, in the account of Bluetopia, the following quotation :

> "The Bluetopians eat no cooked food, and, therefore, require no fires, and without fires chimneys were found wholly unnecessary.
>
> "'But how do you keep yourselves warm?' asked Mr. Packweed.
>
> "'With the glow of righteousness,' replied Mr. Ivory, 'a Bluetopian has only to reflect for a few moments on his conduct during the past few days, and a generous heat of satisfaction runs through him. Indeed, certain of our noblest citizens are obliged to avoid all thought of the past, or they become positively incandescent!'"

This, I consider, to be an instance of what I should call illusion of warmth on the grand scale! The experiment, the results of which are put before you in this paper, is one which proves the frequency of such illusions, and by their means tests the individuals experimented on as to their degree of suggestibility to warmth.

The illusion of warmth test for suggestibility was first studied by Seashore in 1895, after a suggestion made by Scripture in 1893, and work on this subject has also been carried out by Small in 1896, Guidi in 1908, Scott in 1910, and Chojecki in 1911.

I have not time to give you even a summary of the work they did, but will describe my own apparatus, procedure, and results.

The apparatus used for this experiment was the simple resistance wire box used by Seashore and Scott. This consists of a wooden box, open at the back towards the experimenter, and surmounted by two resistance lamps, with switch ; and on the front of which is fixed a strip of hard wood round which is wound a coil of German silver wire, this being connected with the lamps so that when the switch is turned on the coil is gradually warmed.

But, as is shown in this diagram, there is a double wiring inside the box, connected with a secret two-way switch by means of which the experimenter may divert the heat from the wire coil to the balance coil X without affecting the radiance of the lamps, and completely without the knowledge of the subject. A stop watch was used for judging the time taken by the subject to feel warmth in the coil, and the experimenter sits throughout in an attitude of tense expectant attention, stop watch in hand, and right hand ready to switch off the lamps the moment the subject says "now."

The experiment was conducted, individually, upon 100 subjects; forty of these were students of the ordinary psychology class at Edinburgh University, twenty men and twenty women ; and sixty were school children. These children were divided into groups, five being tested at each age and of each sex, between the ages of 9 and 14.

The method used varies slightly from that of any previous investigator. The students were told that the object of the experiment was to discover the lower threshold for heat temperature; the children simply that I wanted to find out how quickly they could feel warmth, that is, how sensitive they were to heat.

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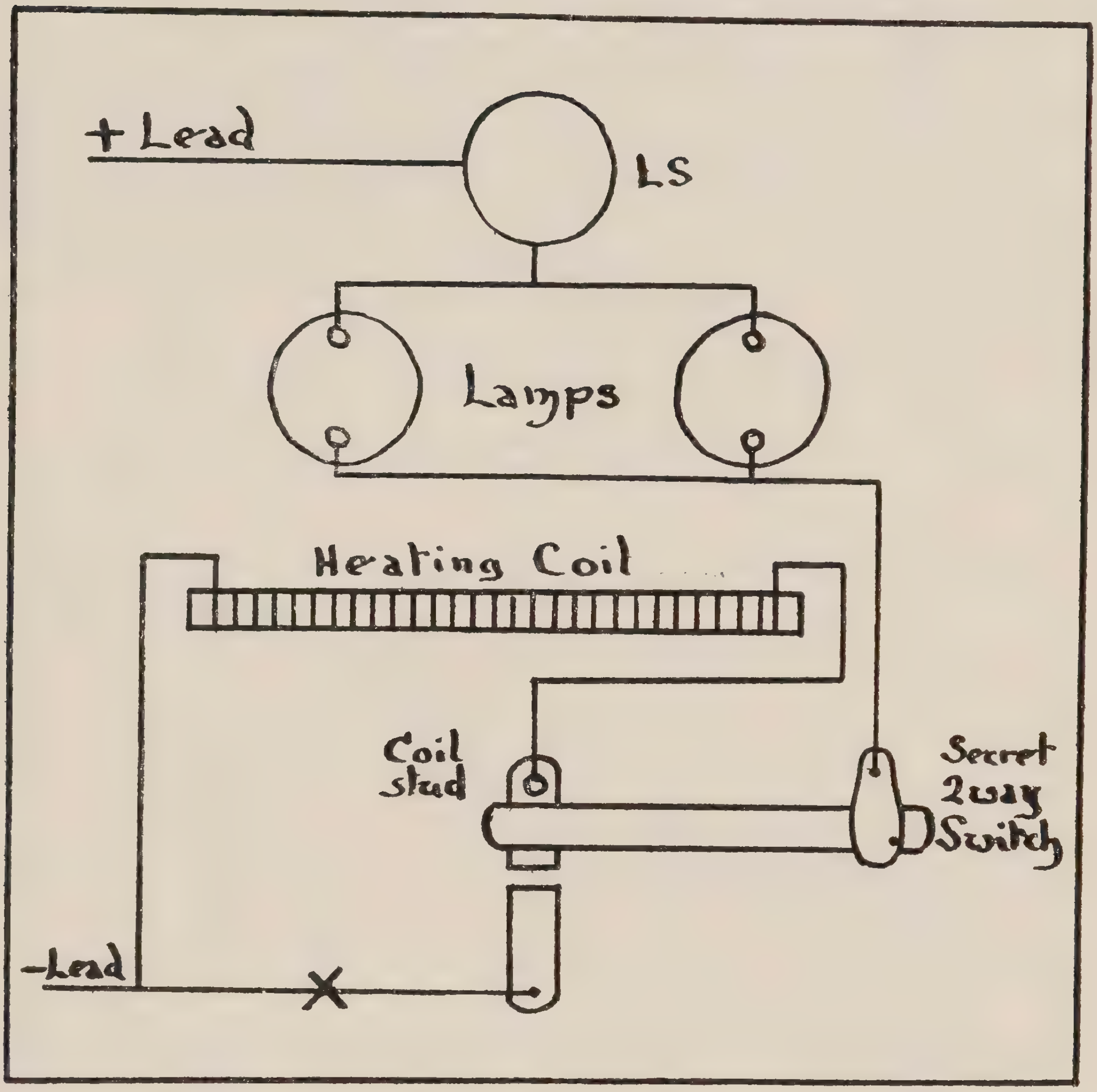
[1] A paper read before the Psychology Section of the British Association for the Advancement of Science. Oxford. 1926.

DIAGRAM I.

APPARATUS SHOWING CONNECTIONS OF WARMTH TESTER.

Balance coil inserted in box at X making lights equal



After explaining this, the instructions given to each individual subject were as follows:

" I want you whenever I say ' ready ' to hold this wire coil lightly between the first two fingers and thumb of your right hand (thus). You see that the coil is connected by these wires with the two lamps, so that when I switch on the lamps the wire coil is gradually heated by electricity. Now I want you to watch very carefully, and as soon as you feel warmth, I want you to say ' now,' and take away your fingers. And I am going to time this. When I say ' ready ' and you hold it, I will switch on the lamps and start the watch, and when you say ' now ' on feeling faint warmth I will stop the watch and switch off the lamps. Then we will leave the coil to cool for two minutes between each trial, and I am going to give you twenty in all. Do you understand? ' Ready.' "

Now out of these twenty presentations in only ten cases was objective heat really present. The distribution of the ten illusions was as follows: They were presented at numbers four, six and seven, nine, twelve and thirteen, fifteen, eighteen, nineteen and twenty.

If the subject for any one of these ten resisted the suggested illusion up to twenty seconds, the secret switch inside the box was moved across so that the heat was felt by the subject, thus ensuring that the true nature of the experiment as a test for suggestibility was never guessed by the subject.

The type of suggestibility here obtained, then, is that where an erroneous belief or judgment is induced into the subject's normal conscious state; the introspection of the subjects in no case gives a hint of variations in the degrees of warmth, but solely of sudden as opposed to gradual warmth, and a persistent commenting on the part of the adult subjects as to the reason for the curious variations in time experienced. Many apologized for these variations, thinking that thereby they had spoilt the results.

DIAGRAM II.

ILLUSION OF WARMTH. TABLE OF GROUP RESULTS.

(After Okabe and Whipple).

GROUP.	Number of Cases.	Trials.	Yields.	Difference.	Percentage of Suggestibility.	Cases with no yields.
Men..........	20	200	117	83	58.5	3
Women	20	200	141	59	70.5	3
Boys, Aged 9..	5	50	47		94.0	—
,, 10..	5	50	43		86.0	—
,, 11..	5	50	38		76.0	1
,, 12..	5	50	29		58.0	2
,, 13..	5	50	30		60.0	2
,, 14..	5	50	24		48.0	1
Total..	30	300	211	89	70.3	6
Girls, Aged 9..	5	50	47		94.0	—
,, 10..	5	50	30		60.0	2
,, 11..	5	50	44		88.0	—
,, 12..	5	50	49		98.0	—
,, 13..	5	50	25		50.0	1
,, 14..	5	50	30		60.0	2
Total..	30	300	225	75	75.0	5

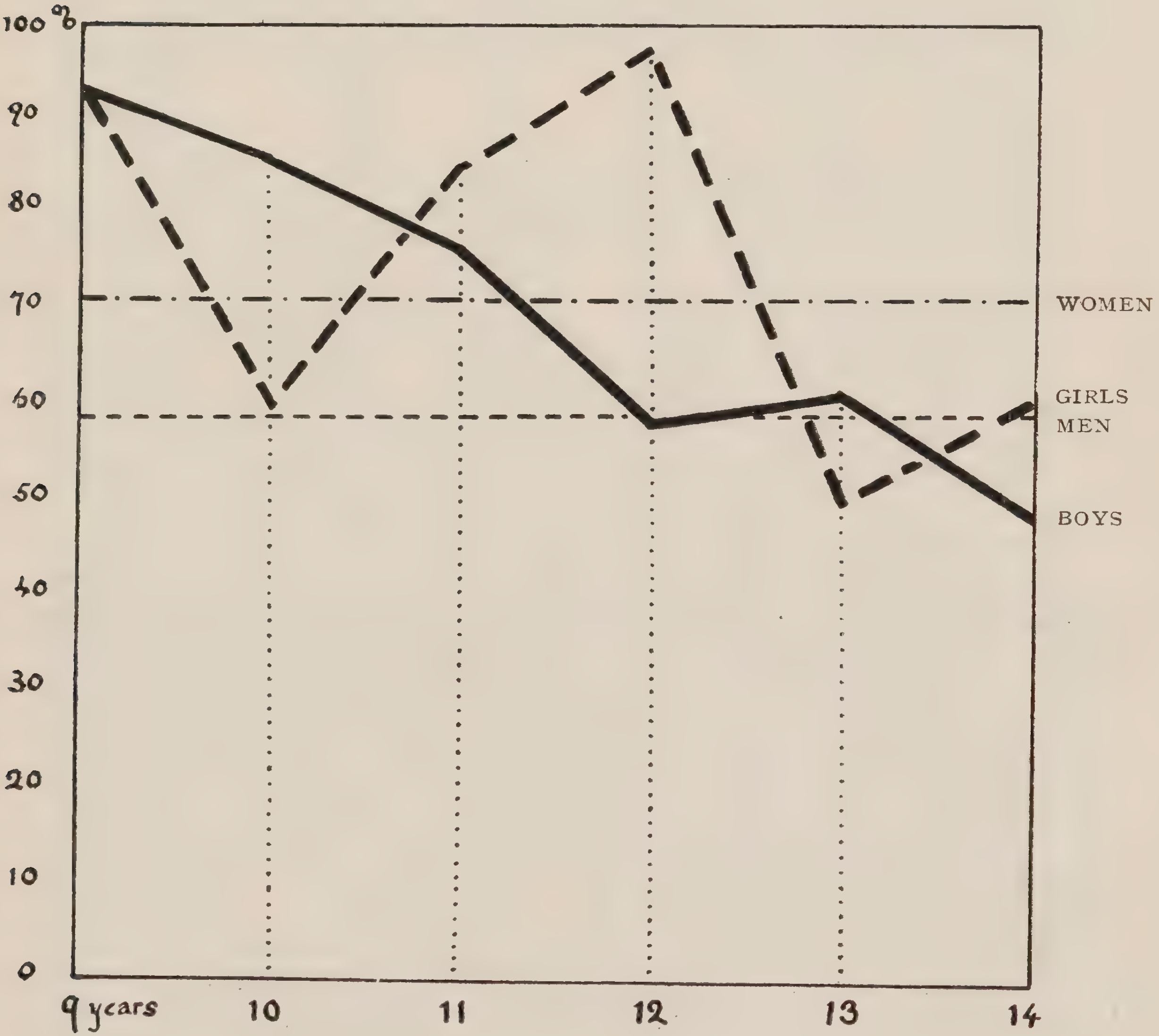
And now as regards the results. The number of subjects tested was too small to allow of significant quantitative results, though some general conclusions may be come to as regards these.

This first table indicates the results under group headings, showing the number in each group, the number of trials without objective heat (i.e., possible illusions), the number of yields (i.e., illusions taken), and the percentage of suggestibility judged by the number of illusions taken out of the total possible ones, and it also shows the number of cases who offered total resistance. Out of the 100 subjects only seventeen resisted every illusion, fifty-four took every suggestion, and the total number of yields was 694 out of a possible 1,000, thus giving an average suggestibility for the whole group of 69.4 per cent. The distribution of this at the various children's age groups can be clearly seen on this table. It is interesting to note the gradual decrease in suggestibility in the boys' groups, from age 9-14, and this is most clearly shown in the graph. (Diagram III.) One may note the order in degrees of suggestibility. The girls' groups as a whole is the most suggestible (75 per cent.), age 12 (the critical year) being the most noticeably so (98 per cent.). The women students came next (70.5 per cent.), and there is very little difference between them and the boys (70.3 per cent.), but the men are markedly less open to suggestion (58.5 per cent.).

Diagram III.

CURVE OF SUGGESTIBILITY.

Comparing Percentage of Illusions taken at each age group Boys and Girls. Noting relative average position of men and women students.



This graph shows the variations more clearly. One may note the gradual decline in the curve of suggestibility in the boys' age groups, and the variations in the girls' curve. The sudden drop at age 10 with the girls is not significant. One at least of that group was distinctly above average intelligence, and two out of the five resisted all illusions, so the result here shown is based on only three cases. The relative average position of the groups of men and women students are marked also in this diagram for purposes of comparison.

DIAGRAM IV.

ILLUSION OF WARMTH. TABLE OF GROUP RESULTS, SHOWING TIME IN SECONDS.

GROUP.	Percentage of Suggestions.	Average with Objective Heat.	Average Objective Heat "Taken."	Diff.	Average with Objective Heat after 20 secs.' Resistance.
Men..........	58.5	5.08	8.41	2.33	3.51
Women	70.5	4.51	8.87	4.36	3.41
Boys, Aged 9..	94.0	4.03	6.21	2.18	2.8
„ 10..	86.0	2.99	5.29	2.30	3.07
„ 11..	76.0	4.17	6.3	2.13	2.42
„ 12..	58.0	4.92	6.0	1.08	2.61
„ 13..	60.0	5.07	7.0	1.93	4.8
„ 14..	48.0	4.5	6.38	1.88	2.44
Total..	70.3	4.29	5.47	1.18	2.69
Girls, Aged 9..	94.0	3.24	6.49	3.25	1.8
„ 10..	60.0	3.63	4.65	1.03	2.1
„ 11..	88.0	3.98	7.73	3.75	2.1
„ 12..	98.0	3.49	5.81	2.32	2.5
„ 13..	50.0	3.81	6.78	2.97	1.96
„ 14..	60.0	3.61	6.9	3.29	1.97
Total..	75.0	3.59	5.79	2.20	2.235

Another method of judging suggestibility from the results obtained, apart from the number of suggestions taken, is by the length of time taken to develop the illusion. This table shows this method of grouping relative to the other; by it children are quicker to receive illusion than adults, and men and boys are quicker than women and girls. The correlation between suggestibility and sensitivity to heat (judged by the time taken to feel objective heat) is not very significant, with so few cases, but a certain relation does exist between the two. Those who take the least time to feel heat are normally the most liable to have illusions of warmth.

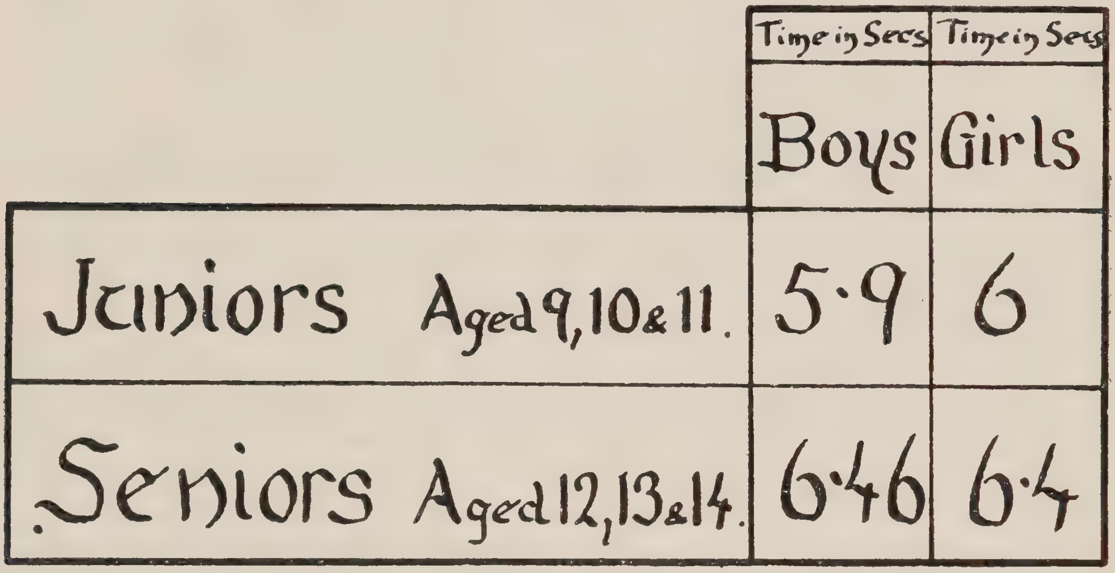
An interesting factor on this table is to note the relation between the time taken to feel objective warmth when the switch was changed after the subject had resisted for twenty seconds, and the time taken when objective heat was present from the first. In every case the latter was more prolonged than the former, showing that after twenty seconds the subject is in a state of great expectant attention and so is sensitive to the faintest warmth which is not distinguished as such under normal circumstances. This difference between the two times is on an average about 1.4 seconds, and is nearly the same for every group.

Again, in nearly every case the time taken to develop the illusion of heat was greater than the time taken to feel objective heat, but the degree of difference varies considerably with individuals and groups, as shown in col. 5.

Diagram V.

ILLUSION OF WARMTH.

Time taken to develop Illusion. Showing relation between Boys and Girls.



	Time in Secs Boys	Time in Secs Girls
Juniors Aged 9, 10 & 11.	5·9	6
Seniors Aged 12, 13 & 14.	6·46	6·4

Taking the time to develop the illusion as the test of suggestibility there is a marked similarity between the boys' and girls' groups. This is seen if we divide the children's groups into juniors and seniors. The junior girls (aged nine, ten, and eleven) take an average of six seconds to develop the illusion, and the junior boys 5.9 seconds. The senior girls take an average of 6.46 seconds, as against 6.4 seconds for the senior boys.

And now as regards the qualitative results.

(*a*) *Sex Differences.*—An interesting point of difference may be noted between the sexes which holds good both for adults and children. The women and girls tend to take either all or none of the suggestions, the distributed cases between 100 per cent. and zero being 35 per cent and 16.6 per cent. respectively, whilst with the men and boys the number of distributed cases out of the total number are 50 per cent. and 23.3 per cent. Though numerically not clearly noticeable, this fact appeared very obvious whilst conducting the experiment.

It appears, also, that women and girls are more suggestible than men and boys, and also more sensitive to heat, and that there is similarly a greater degree of suggestibility and sensitivity amongst children as against adults.

(*b*) *Variations in Subjects.*—The introspective records of subjects show varying accounts of sudden or gradual heat. Some even gave a special localization for the illusion, one "felt it only in the middle finger," another "felt it on my thumb here." Both these two took 100 per cent. of the illusions.

Some subjects appear to record illusions every time and never objective heat. These are those who developed warmth on every occasion in under two seconds, and of these there were three girls, two boys, three women, but *no* men. A typical introspection from this type was " I can't say ' now ' quickly enough."

Many subjects who resisted some or all had a faint illusion to start with, but as they waited to make sure no record was made. This is gathered from such introspective evidence as these :

> " I get it for a bit and then it goes away." All suggestions were resisted.
>
> " I thought it was coming at the beginning, but it did not develop." Twenty per cent. taken.
>
> " There are two levels of heat, slowly and suddenly." Sixty per cent. suggestion taken.

The obvious resistance type is represented by those who maintain that the coil remains " dead cold for a while." One subject said at the beginning, whilst resisting every illusion, " Children might *imagine* they felt it," and before the end of the experiment he yielded twice to suggestion himself.

The following were sources of variable error in subjects : (1) The effect of hot and cold hands on the time, the latter appearing more sensitive ; (2) Some children would hold the coil tightly, and so inhibit all sensations of heat, whilst others would move their fingers about on the coil, so dissipating possible illusions ; (3) Some refused to face the lamps, and so were unaffected by one of the most suggestible features of the experiment. On being asked "Why? " one earnest subject said she " wanted to avoid all distraction."

(*c*) *Types of Suggestions.*—There were various types of suggestions possibly present, but, of course, these can only be tentatively expressed, introspective evidence being impossible under the circumstances : (1) With the child eager to please there was a possible anticipation of warmth and a corresponding shortening of the time. Occasionally I caught an eye watching my face to see (after a pause of about fifteen seconds) if they ought not to be saying " now," and seeing me expectantly waiting for their answer, they would give it then. (2) Auto-suggestion through the subject's own expectant attention, due partly to the fact that for a certain number of times heat had been experienced after a certain lapse of time, and so expectation led them to say " now " at the same time again. (In fact, with some subjects, as their individual charts show, there was almost an experiment in time estimation, the illusion being given so closely after the average time for objective heat.) (3) Hetero-suggestion, from the experimental conditions, the subject being affected by the experimenter's attitude, the lighted lamps, and the general tense atmosphere of expectancy, and readiness to say " now."

I count it to the credit of my methods throughout the experiment that only one subject, a man student, guessed at the right solution of the variations in time, though many discussed theories to account for it.

The Incidence of Philosophy on Education.*

By H. J. W. HETHERINGTON.

1.—The officers of the Institute have laid upon me the duty of discussing the question: "Does Education require a philosophical basis?" It is an important enough enquiry; and one as to which I can see that there may be a division of view. But I propose to deal with it in the most summary and even high-handed fashion. Partly the reason is that in thinking round this subject I have found my mind dwelling on a different but related theme, on which I should like to say something; and partly it is that I conceive that an affirmative answer is all but unanimously supported by the whole tradition of, at all events, Scottish educational thought and practice. But I admit that even a Scottish tradition may be ill-founded. So, by way of prologue, I offer two considerations on the subject assigned to me.

First, it would be easy, I think, to establish our affirmation by the familiar process of showing that the negative is almost a contradiction in terms. To hold that education has no need of a philosophical basis is to assert a view of the natures of both education and philosophy which itself amounts to a philosophical theory. But, to quote Hume's judgment of Berkeley, while arguments of that sort admit of no refutation, they produce no conviction. Hence, secondly, we may take a wider sweep, and approach our enquiry in a more concrete fashion. To that end, let us ask ourselves what account we can give of our common business of education. We shall find no difficulty, I imagine, in accepting for all our several institutions what Dr. Percy Nunn has said of the school. "The school," he writes, "must be thought of primarily not as a place where certain knowledge is learnt, but as a place where the young are disciplined in certain forms of activity, namely, those that are of greatest and most permanent significance in the wider world."† We shall recognize that, I hope, as a true and important account of our office. As teachers, we are trustees for the tradition and achievement of our civilization—the chief, though by no means the sole agency whereby our generation communicates to those who follow on all that is best worth perpetuating in our own social inheritance and attainment. It is our function to fit the young to understand, to enjoy, to maintain, and to enhance what has been won by the labour and endurance of men in the civilizations to which we and our children are heirs.

If, then, we so regard the matter, it is plain, is it not that this function can never be uncritical or merely repetitive? The teacher has first to take hold of the achievement of the past, to understand and to appreciate it: then to select from it that which is most central and significant, and whatever else he does, to try to communicate *that*. The life of his society must take form in his mind, must organize itself in some system of interest and principles which is the substance of his thought and feeling, and which in the degree to which he is a genuine individual, touches and colours his every activity. And thus to occupy a point of view, or, if you care to put it so, to be possessed by a scheme of values, is essentially to have the philosophic vision. I do not say that it always presents itself in the shape of an articulate philosophy. It comes, perhaps, more often in that high union of thought and emotion which we call religion. But I believe that everywhere, whatever its specific form, critical reflection on the nature of our experience is a constituent of it. It stands to us as that which, measured by all the tests of theory and practice which we can apply, best meets the demands of every side of our nature, that which, so far as may be, has been tried and proved. And I think it certain that no man or woman can rise to the height of the teacher's vocation unless he has in him a rallying point of his own inner life, some credo by which he will hold, and by which he will at least try to live. It is not his business to talk much about it—emphatically not his business to proselytize for it ; but *if it be truly his own and honestly come by,* communicate it he can and must.

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* An address delivered to the Annual Congress of the Educational Institute of Scotland in Glasgow: Christmas, 1925.

† Education, p. 211.

I am aware that this may be thought to be dangerous doctrine, to justify all sorts of narrowly sectional bias and interest. The safeguard lies in the words which I have accented. Let his outlook be truly his own, and honestly come by, let it be, as far as he can make it so, open-eyed, philosophic, and the teacher's inevitable expression of it will not go wrong. After all, we can bring the matter to a very simple test. Look back on your own earlier years ; and you will find that the teachers who now count for most, to whose influence you can now trace some living strand in your belief or practice, were those who, whether they knew it or not, gave you some insight into the kind of men and women they were, and into the kind of world in which they habitually dwelt. That which they gave was part of themselves, and they gave it as surely, and sometimes as unconsciously, as the rose gives its beauty. Carlyle spoke of a workman who could break every item of the Decalogue with every stroke of his hammer. One can set against that man the teacher who can convey a fine and exalted and enduring attitude to life when he is teaching the multiplication table. I agree that it takes more than this quality to make a good teacher ; and that others than teachers have need of it. But that the good teacher supremely needs it I take to be a plain matter of fact and experience. And if you grant me that, you grant me all that I care to contend for about the relation of education and philosophy.

2.—It would be easy to draw out this conclusion into an historical discourse ; and to show the correspondence between certain dominant philosophical systems on the one hand, and certain principles of educational method on the other. But I shall venture to extend my terms of reference, and for a moment to enter upon a larger field. I should like to indicate how, as I see the matter, in our contemporary situation, the teacher's function has come to be even more than that which I have described—how he has not merely to communicate the past, but to shape the future. The present seems to me to be a time of quite exceptional interest to the teacher, and to challenge him not merely to greater zeal, but to a deeper conception of his duty. For I believe that at the moment we are in the presence of a striking concurrence of philosophical thought and educational practice, both alike in line with a grave and gravely-felt social necessity.

I speak with some trepidation of what is going on in education. But the signs of the times are surely not hard to read, and it seems that we are witnessing something like an educational revolution. In the sphere of practice there is the work of experimenters like Madame Montessori, MacMunn, and Sanderson, to name only three of many. On the side of theory there are the writings of Dewey, of Nunn, and of our own Scottish Sir John Adams. Negatively, the new movement is a reaction against formalism. Positively, it is harder to describe. We might call it a new Humanism, based on two main ideas. One is the idea of individual freedom and self-direction—the motive underlying, e.g., that whole range of methodical conceptions now well known as the Dalton Plan. The other, and more profound, is that of finding the material of educational development in the common interests and occupations of ordinary life. It is this latter point that I want particularly to emphasize. It seems to me that there is here, if we can catch it rightly, the expression of a true philosophical insight and of a sound social construction.

Let us see first what the opposite outlook implies. You will remember how, in the greatest of all educational books, Plato describes his ideal of the philosopher king, to whom the supreme direction of public affairs must be entrusted. Plato gives there his version of the best that human nature can be. The highest endowment, the most prolonged and arduous education, the severest discipline, the most carefully adjusted social conditions have gone to the making of the ruler. He is the culmination of the whole civilization of his age, the completest expression of its moral and intellectual excellence. To give him the training that his qualities demand and that will equip him for his political responsibilities is the chief business of the educational system of the State. And you remember how Plato pours out the wealth of his scorn and irony on those blind souls who will not recognize in such a man the one fit controller of their destinies, and who, to their own destruction, choose the demagogue and the sophist rather than the true philosopher. Perhaps, too, you have sometimes felt a certain sympathy with the perpetrators and victims of this folly. For, as Plato draws the picture of his perfect ruler, we seem to find something cold and unattractive about his austere nobility, something which sets us at a distance from him, and hinders the flow of our confidence to him. It is not merely that he is greater, but that he is so different as to be indifferent. There is passion in him, as Plato makes plain, passion and unending zest and eagerness. But his deepest care is not for the things which most nearly concern us : and it is all too obvious that we and our affairs stand in the way of what he really wants. That, I suppose, is at bottom the secret of this half-shamefaced feeling that we understand the preference of the unenlightened multitude. The philosopher king dislikes his job : and even if he be aflame for the permanent welfare of the State, it is a trouble to him to wrestle with the ordinary interests and wayward doings of us common folk. His life, in a fashion, is spoiled for him by the fact that he has to deal—even as a king—with human things. That means to him a return into the cave of shadows from the light of the sun and the freedom of the open plain. He regards his office, as Plato says, not as " anything noble, but as a compulsion laid upon him." He lives not for his work but for his philosophy ; he is happy only when he can lay down the burden of daily duty and give himself to study and contemplation.

To all this, our first reaction is surely that there must be something wrong. It can't be right to regard the ordinary business of life as sheer loss, as sheer obstruction to the highest human values. None of us has a word to say against holidays ; still less against periods of temporary withdrawal from the pursuits of every day in which a man may meditate about the things that do not ordinarily fill his mind. The Sabbath, after all, was instituted by a people who knew something about the conditions of moral and religious health. And I should so far follow Plato as to maintain that the supreme values of human life are to be found in activities which take us beyond our usual interests and occupations, and for which these furnish no adequate means of expression. But that is not to hold that we are to look for these values only by fleeing the daily business of the world, that there is nothing there of lasting significance, that such service as we give to it is so much loss of time from those things that concern our true satisfaction and welfare.

Admittedly the world is more prone to the opposite error from that into which Plato seems here to fall. We are more apt to think that we waste our time when we seek the company of the poets and the prophets rather than concentrate on increasing our efficiency in our immediate business. But there is no doubt, I think, that we have suffered from Plato's error also. For, in its own way, is not the uneasiness of Plato's philosopher-king a paradigm of a disease that afflicts our whole modern civilization ? Is it not true that one of our deepest and hardest problems lies in just this divorce between daily work and human values ? It is a sadly familiar complaint that the occupations in which a great mass of our people engage are, in themselves, exhausting and insignificant, calling forth a man's store of physical energy but yielding small increment of skill, small joy of creative craftsmanship, meagre opportunity for the expression of individual imagination and thought, and little pride of civic service. A man enters these vocations not for anything which they themselves afford, not hoping therein to make himself a better or a happier man, but because he must earn a livelihood—in Plato's words : " not as anything noble, but as a compulsion laid upon him." And have we not too readily taken it for granted that in our present economic order at least this must be so, that in a great part, perhaps the greater part, of the world of industry and commerce there is, in fact, no geniune spiritual value to be won, that we must look on it as just so much inevitable evil and trust elsewhere to find experiences which are intrinsically worth having ? That certainly has been the assumption underlying much of our social practice ; and I suspect, too, that the same view is at the back of much insistence upon the need for " education for leisure." We have worked on a theory of " compensation," the theory, namely, that the rewards of many, if not of most, of our occupations are to be found entirely outside the occupations themselves—in high wages, in longer periods of freedom from work, in recreations, hobbies, excitements, interests, studies—anywhere but in the work itself.

Now, I am far from denying that in an industrial society like our own at its present stage of development, there is much work to be done towards which it is hard to take any other attitude. It is certain that we can, if we will, steadily reduce the volume of such employment. But for some generations to come, some such apparently monotonous drudgery will remain. Nevertheless, we have no right easily to consent to that, or to accept the view that even in relation to that work there is nothing for it but to acquiesce in its unrelieved dis-value. And, on the larger scale, when a whole society regards in that light the greater part of the ordinary occupations by which its life is carried on, it is hard to resist the conviction that that society is morally sick, that it is on the way to pessimism as to its own destiny. For work is an essential condition of man's survival on this planet—a necessity from which he can never hope to be free. Under any conceivable circumstances a man's work will continue to require the expenditure of the greater part of his strength and energy, and to hold, for the middle hours of his waking life, the focus of his attention. If, from that central form of his experience, from that which makes the heaviest call upon him, we are to exclude the hope of an achievement of spiritual values, if, in a word, there is to be no joy in labour, no expansion of a man's powers, then our culture, that region of experience in which we look to realize those values, is doomed to remain a sterile and impotent thing. It will not live and will not satisfy because it does not touch our keenest concerns. There is, in truth, no real escape for us that way. The theory of compensation, the programme of education for leisure, is a counsel of despair. We shall have our malaise, we shall have no secure social health, until we recapture for the mind as part of the domain of its self-expression far more of our working life than it inhabits to-day. We have somehow to discover *there* a theatre for the attainment if not of the highest, certainly of genuine spiritual values.

3.—Now, clearly, this is an enterprise which concerns others besides the educator. It is the issue that confronts our statesmen, our economists, our sociologists, our leaders in industry and industrial politics. But assuredly it is a challenge to the teacher as much as to any of these, and without his help there can be no solution. And it is just here, I believe, that these new educational ideas to which I have referred strike in with their most hopeful contribution. For this seems to be precisely the thing which, consciously or unconsciously, they are trying to do—to elicit the intellectual, æsthetic and moral significance of the ordinary interests and occupations of life, to find the growing point of the mind in its effort to handle concrete, everyday problems. It is, I think, the mark of the best educational practice that it meets the pupil on the level of the interests which he already has, lets him see how these enlarge and develop, and how they lead him out into other forms and aspects of experience. In a word, it reaches the meaning—i.e., the value—of an experience through the competent and natural treatment of that experience itself, and not in some region external to it. Of course, I am not suggesting that even in education so conceived, no process of abstraction is involved, or that we can dispense with the labour of learning. A child must master his tools, just as a workman does ; and that wants practice. But it makes all the difference if we can let him see that they are tools, meant to be turned to practical uses, and not irrelevant rubrics and formulæ. When we have done that for the child, more intelligently and for a longer period than is now possible, is it too much to believe that in his ordinary adult occupations he will find and make far more room for the play of thought and interest, win a more lively satisfaction of his finer impulses, and create for himself a more firmly integrated way of life? No doubt there will be material changes. For one thing, productive efficiency will be immensely greater. But the spiritual gain will be more remarkable and secure.

This, then, in barest outline, is to me the most important result that is emerging from recent educational discussion. Not that the moderns are the first to have seen this necessity—far from it. But we can now see it, I believe, with a new intensity and a new understanding of all that is implied in and required by it. Two things appear to have helped us to our greater clearness of vision. One is the whole range of educational experiment which has become available through the extension of adult education itself. In that field, very notably, the new methods have been at work and have proved their fruitfulness. The other is the contemporary movement of philosophy. There, wherever you look at it (with, perhaps, the single exception of Italy), whether in Bergson's " Creative Evolution " or in the outcome in this country and in America of the stirring conflict of Idealism and Realism, the tide runs pretty steadily in one main direction. The root of Plato's view of the division of mind of the philosopher-king is the complete separation which he makes between the world of true being and the temporal and changing world of an ordinary experience, and between the rational intellect and other powers of the soul. And it would not be unfair to sum up the essential effort of recent philosophy as the attempt from various sides, and in different ways, to mitigate the sharpness of those distinctions. The metaphysical issues are still hard enough to state, and there is no agreement yet as to the exact force and significance of the oppositions there indicated. But there is, at least, a strong disposition to hold that wherever reality is to be found, it is not by turning away from the world of appearances, but by penetrating to the full meaning that is latent there.

We have here, therefore, what I take to be the meeting-point of recent work in education, philosophy, and social construction. I have called it something like a revolution. But like all revolutions worth accomplishing, it will take a long time to come to fruition. It will impel us to great changes in our educational practice, especially in the treatment of the adolescent. It is clear, e.g., that we shall have to get rid of the bogus distinction between vocational and cultural education, and set ourselves much more honestly and frankly to educate seriously and of high purpose for vocation of a livelihood and of a life. And that means that we must aim not only at technical efficiency, though that is not a trivial end, but at larger views of what it is possible for men to get out of their work, and of the qualities and aptitudes of body, mind, will, and imagination that will let them win all that there is to be won. There are plenty of obstacles in our way—troublesome external conditions, and a strong (and so far as the past is concerned, a not ill-founded) suspicion of the very name of vocational education on the part of great bodies of organized workers. Courage and patience will overcome these. Our greatest difficulty is in ourselves—our inertia, our failure in imagination. The older methods make far less call upon us, and require from us no hazard of faith in the unknown. It is not easy for us to walk without the accustomed supports, to take upon ourselves the responsibility which we are prone to lay upon the "system." But let us recognize, at least, that that is what the situation demands. Hitherto our profession has helped mightily to create a civilization which, with all its defects, has in it the promise of a high and enduring achievement. But there lies before us now this crucial task of relating the best things in that civilization to the daily work and interests of our people—of making them what they were meant to be, a common wealth. That is our new and most difficult function, and our ample opportunity of service.

Recent Developments in Method.[1]

BY M. W. KEATINGE.

THE term method can bear so many meanings that for the purpose of this paper it will be necessary to define it with some rigidity. It may be used to mean (1) the manipulation of a class or, as at one time it was called, class management; or (2) some simple rules for demonstrating and questioning in the older style of elementary school teaching; or (3) specific methods of dealing with the special problems of individual school subjects at the various stages of school life. The first two of these can be treated from the standpoint of the craftsman or the Army instructor. For certain matters such as the manipulation of elementary operations in arithmetic, or the explanation of the parts and handling of a rifle, common sense suggests rules and sequences of practice which have their uses and can be mastered in a short time by persons of ordinary intelligence. But such considerations are scarcely scientific. The third, while invaluable for the illustration of general principles, would take us so much into detail as to be unsuitable for a short exposition. This paper therefore will deal with none of these, but will consider the general background of thought which should direct the aims and thus guide the practice of the teacher. It is only by reference to this mental background that a treatment of the minor topics mentioned above can in any sense be called scientific and they will be alluded to only incidentally. For method is to be found at the spot where the whole of educational theory cuts across classroom practice and the innumerable problems of special method; it is seen at the point where a teacher's theory of life and of education, and through these the whole of his personality is brought to bear upon his craft and give life and meaning to the small detail; it is with us when ingenious devices for the treatment of individual topics are worked out. But method in our sense does not consist of the small detail or of the special device. For the successful use of these ingenuity, tact, invention, and sympathy are required. Method in our sense of the term will not produce these; they are gifts which a teacher either has or has not. It will, however, insure that when they are there they will be used to best effect and with the right aim, and if it is impossible to produce these qualities it is quite certain that they can be enhanced by a mental background of the right kind. Such a background will not give specific methods though it may suggest them, it will not produce stereotyped procedure but will demand and lead to infinite variety. It will be flexible and stimulating and will keep the practice of the classroom in close touch with the claims of social and industrial development.

In most branches of natural science it is possible at meetings such as this to announce startling discoveries and epoch-making changes of attitude. On topics such as the atom or the inheritance of acquired characteristics new work of a definite kind can be alluded to and fresh accumulations of evidence can be brought forward. Of method in the sense in which I am using the term there is nothing startling to be said;

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[1] A paper read to the Education Section of the British Association, Oxford, 1926.

indeed, short cuts, devices which eliminate effort, and many of the much advertised newer methods, may safely be put on one side as bordering on charlatanry. And yet I believe that there has been a change of attitude which may be described as novel and even as epoch-making; that this results from the accretion of a large number of somewhat dissimilar elements; and that as a result a conception of method in education which in the wider sense of the term may be called scientific has arisen, though, perhaps, the word philosophic would be a more suitable term to use. I can only hope in the time at my disposal to show briefly how this concept has arisen, what are some of its main features, and with what departments of thought its growth is vitally connected.

A few words on the history of school method in this country may serve as an introduction. In the middle of the nineteenth century the only subjects taught seriously in schools other than elementary were the Latin and Greek classics, and occasionally mathematics. The method of teaching the classics was one with a long tradition behind it. It consisted in first learning by heart the grammar and accidence and then, armed with these weapons, in attacking the classical authors. A large number of pupils never got as far as an appreciation of these authors, but for the few who struggled to the top the method was satisfactory in that it produced some extremely good classical scholars. The point for us to notice was that it was an essential part of the method that the pupil should unravel the sense of the classical author for himself, and this hard grappling with an analytical task was considered to give a valuable training. In the teaching of mathematics the same feature was to be found. Much of the work was problem work, and this work had to be done by the pupil under the guidance of the master. In classical teaching much stress was laid on learning by heart, a process which was probably carried too far; though in Western schools it never occupied the place assigned to it in the schools of the East, when the learning by rote of sacred books was always the main business of school and University.

Of views on method other than the preference for one text-book over another there was little. The first hint of this was to be found in connection with elementary schools. Here several factors contributed to make some attempt at method seem needful. The course of instruction was short, the classes had of necessity to be very large, the teachers had little culture, and from the middle of the century onwards public money was being expended for which some visible return was demanded. Consequently, methods of instruction in reading, writing, and arithmetic were formulated, and we find Kaye Shuttleworth prescribing, and imagining in doing so that he was basing his prescription on Pestalozzi (who was, of course, not an authority on method but a simple-minded and muddle-headed genius in his desire for social reform through education), that the proper method in teaching is for the teacher to perform the process of analysing any subject into its ultimate constituent parts, and then to bring these parts together again for the pupil, as in the alphabetical method of teaching spelling. The general development was on the lines of simplifying and spoon-feeding knowledge, and this was, in particular, the fate that befel the newer humanistic subjects, history, geography, and English literature. Towards the end of the nineteenth century few subjects except the Latin and Greek classics were taught in such a way as to give much hard individual work. Simplification, spoon-feeding, and learning by heart were the common processes. That the majority of boys left school knowing no classics and scarcely anything else does not concern us here.

The changes in the conception of method during recent years have in the main been due to five factors : (*a*) a new psychological standpoint ; (*b*) the introduction of experimental science accompanied by a new interest in the logic of discovery ; (*c*) a new social outlook ; (*d*) a fuller treatment of the theory of æsthetics ; (*e*) the introduction of mechanical contrivances such as the cinema and broadcasting. We shall take these *seriatim.*

(*a*)—(1) The striking feature of modern psychological development has been the discarding of the intellectualist conception of mind. In the older psychology the tendency was to look on mind as chiefly occupied with knowing, and this suited the prevailing educational doctrine that a main object of education was to instil information and to see that it was understood. A corollary of this was the stress laid on sense perception, which was very necessary, but, for our present argument, subsidiary. The modern tendency based on a more accurate observation of the facts is to consider mind as conative ; that is, to recognize that whatever its other aspects may be, such as feeling and understanding, the struggling and striving element in mind stands out as being the more fundamental. That this position may be exaggerated, as in some of the psycho-analytical literature, is no doubt true, but after all deductions have been made there is a good case for maintaining that the structure of mind is primarily dependent on wants. Attention and interest, those important factors for the teacher, depend on "wants," on a desire on the part of the pupil to acquire knowledge or to carry out certain operations. The chief duty of the teacher, therefore, is not, as formerly was conceived, to arrange and simplify the subject matter (though this may frequently be needed), but to produce these wants or desires in his pupils. How this is to be done lies outside our present scope, though it must be observed that these " wants " can be produced only by an understanding of the individual pupil.

(2) Indeed, the second position that arises from this new psychological outlook is that of individuation. Much of the older teaching was conducted on wholly mechanical lines. The class was taught as a whole and each member of it had to prepare the same task and be examined on it in competition with his companions ; and much work of this kind is, in any circumstances, necessary. But a new point of view has emerged, namely, that each member of the class is an individual, and that the will to work must be stimulated in him in accordance with his own nature and tendencies. In other words, that the teacher must look on his class not only as a complex unit, which for certain purposes it is, but also as a collection of units, each of which must be separately understood and guided.

(*b*)—Our second factor is the introduction of experimental science and the new interest in the logic of research. The attention given to the logic of discovery by logicians from J. S. Mill to the present day, and particularly the stress laid upon the importance of hypothesis by recent writers, such as Professor Dewey, gives the theoretical background to this aspect of the question. But historically it was not theoretical considerations that primarily brought the experimental method into school life, but the introduction of natural science and the evident absurdity of teaching it (as was done in the early stages) by demonstration and the learning by heart of a science text-book. As a result of the crusade by Henry Armstrong on behalf of experimental work at the end of the last century, no school now teaches science without a laboratory in which individual experimental work can be performed, though, owing to a lack of theoretic background, this crusade produced many absurdities. This theoretic background has now been supplied, and, as a result, certain principles, applicable with modifications to all subjects, stand out :—

(1) In any subject it is the individual work by the pupil in solving problems that is the vital matter : all learning by heart and all massed class work is subordinate to this. The proportion in which this individual problem work stands to the explanatory and directive work of the teacher varies greatly with the age of the pupil and the nature of the subject ; but even if in certain cases the amount of it is small, it is none the less the important factor.

(2) In the teaching of every subject it is the acquisition by the pupil of a certain technique or method of attack which is the chief aim. This technique can be acquired only by intensive work in a small field of the subject. It is therefore essential that the subjects chosen should be representative of varied techniques and that the portion chosen in each subject should be fully representative of the technique of that subject.

(3) Intensive work in a limited field is not enough. There must be a background of extensive work to give meaning to the small portion selected for intensive work. This will be given by rapid reading, lectures, informal talks. As will be shown later the insistence on small portions of intensive work and their proper relation to a wider survey is, at present, the most important consideration. A survey of syllabuses of work which would be considered very complete, such as those drawn up for French schools and Japanese schools, shows this consideration is often wholly neglected.

(4) For intensive work of the kind suggested it is essential that all classrooms be converted into workshops with an adequate supply of apparatus. The only subjects for which this is adequately done are the science subjects with their well-equipped laboratories, and possibly the higher classical forms in our greater schools. For most lower forms the supply of apparatus, which in many subjects means an adequately stocked classroom library, is *nil*. Yet there is no difficulty in providing the needful machinery if we suppose in the teacher or the head master a moderate supply of intelligence and the necessary funds. It is not impossible for the teaching of literature to supply standard authors on a considerable scale ; or for the teaching of geography a reference library of books of travel, of statistics, of geographical magazines, and so forth ; or for the teaching of history histories written from different standpoints and on different scales, contemporary documents, and varied works of reference. The list might be extended through all the subjects of the curriculum.

Always it is possible to provide apparatus which is in some respects similar to that provided in a science laboratory, and can be used in an analogous manner. Nowhere, or very rarely, except for a few senior forms, is such apparatus in fact supplied.

(5) This position should not be interpreted as a demand for nothing but problem work. Much school work must of necessity consist of routine instruction. Dewey, it is true, assumes that hypothetical reasoning is the only process that can be called thought, but the existence of problems of method for which this position offers no solution suggests a defect in Dewey's view of mind. There are many elements in method other than the setting of problems which depend on hypothesis. Half the ingenuity of a teacher has to be expended in getting his pupils over dead ends, when they are acquiring enough accuracy to be ready for the next interesting problem, and when the interest for the moment seems to wane.

(*c*)—The third great factor conditioning method is the social aspect of classroom life. Much attention has been given recently to a consideration of the relations between the individual and the group, and of the difference between a herd, mob, or chance assemblage of individuals, and a true community. In the main, all thinkers are agreed that a true community exists only when each individual in the group is aware of and accepts the end for which the community exists, and is willing and able to make his own contributions toward the attainment of that end. The application to class teaching is evident. The class must be organized and must understand the aim in the structure of knowledge which is being erected; and the individuals, either singly or in groups, must be prepared to make their own contribution (other than the learning of lessons) from time to time, by preparing exhibits and drawings, checking results, and collecting information. The brief allusion which is all that we can make here obscures the importance of this topic. For it is felt by many that the working out of a subject in this way by an organized group may not only promote the interest in an educational grip of a subject, but also serve as a valuable training in community life—probably the most valuable because the least artificial that the school can give.

(*d*)—The next great factor in our list is the quite unusual interest that has been shown of recent years in the nature of æsthetics and the keen analysis to which the conception of beauty has been subjected; an analysis and a development of thought that cannot be neglected by those who are teaching any form of literature or any kind of fine art. Here, again, we can only be allusive and state what is for the teacher one of the important aspects of this doctrine. It is this: that the beauty of anything consists of the way in which you look at it; that it is a spiritual contribution made by yourself; that the beautiful does not exist in objects but is seen by you in them.

The lesson for the teacher is that the beauty of any masterpiece of literature or work of art cannot be didactically taught, but that the pupil must be led by appropriate methods himself to have the æsthetic experience; and that this can be done only through individual work of a slow kind performed by the pupil himself. " My boys," said Keate to a confirmation class at Eton, " you must be pure in heart ; and if you are not pure in heart I'll flog you." But just as you cannot teach purity of heart by flogging, so you cannot encourage æsthetic appreciation by making your pupils get up for examination the æsthetic judgments of others.

(*e*)—Our final factor that contributes to a proper understanding of school method is the growth of those mechanical adjuncts of teaching, the cinema and broadcasting, and the train of thought to which they introduce is the following. It always has been the function of the school to give information, which sometimes has been of a rather disconnected and desultory kind, though at the same time it always was recognized that the systematization of this knowledge was important. The rapid growth of means for mechanically scattering casual information through the community calls for a greater insistence on system in school work ; on the need for working carefully through well-ordered schemes of study in which information is won by the pupils' own serious effort and fitted into its proper place in a structure of knowledge which aims at a well-defined end.

We have now considered five factors, the development of which in recent years throws light on the essentials of method, the psychological, the logical, the sociological, the æsthetic, and the mechanical, and these five paths converge. They all lead to the same truth. The essence of method is the encouraging of slow individual work by the pupil himself, alone or in groups, while the forced feeding that we so often find, the mere mastering of facts or learning of text-books, is either nothing more than contributory to and preparatory for the individual work that we have in mind, or if it is carried further than this, may be actually harmful. If, as I believe, the mere instilling of dead knowledge is carried too far and vitiates much of our school work, the reasons for this are three in number :

(1) The existence of a bad tradition dating from the days when the learning of Latin grammar was the chief part of early education ;

(2) The ignorance on the part of some teachers of psychology and logic, and their lack of humanity, social insight, and educational honesty ;

(3) The incubus of the examination system.

All these factors contribute, but we will concentrate on the third, probably the most important. No one but a fool would say that examinations should be abolished, but every wise man would agree that in their present form they affect our educational system very adversely. School examinations, without exception, set syllabuses of work to be got through that necessitate the most methodical cramming, that appear to leave no leisure to the teacher or the taught, and that inevitably prohibit the slow individual work that has been advocated. There is no difficulty in proving this statement for every school subject, with the possible exception of mathematics, but more particularly it is true for the most important subjects in the curriculum, history, geography, literature, and some branches of natural science.

Is there a remedy ? I believe that there is, and that by a little effort on the part of everyone concerned the situation can at any rate be improved. In the teaching of all subjects it is essential that the proper relation of intensive work in a small field, to give a training in technique and accuracy of thought and statement, and extensive work in a larger field to give the background, meaning, and general reference of the intensive work should be a matter of the most careful consideration. If it were established that in all school examinations for every stage of work the syllabus should be divided into two parts : (1) a *very* short portion or section for slow intensive work, and (2) a larger portion for extensive work, it would then not be impossible at the beginning of the school year, and at the beginning of each term, for the teacher to do what every respectable teacher has always wished to do, to go slowly, to encourage individual and problem work, to lay stress on the development of skill and technique, and thus to lay the foundation of a real interest which will grow and mature. As it is, with the crude and soulless examination system which we have absent-mindedly permitted to grow up, I am convinced that in many schools, and those by no means the worst schools, such teaching is impossible.

Psychological Tests of Mathematical Ability.

BY LESLIE FOURACRE.

EDUCATIONAL attainments appear to depend upon capacities of two orders: (1) A general capacity entering into all subjects—a capacity in which "general intelligence" is the chief factor; (2) Special capacities limited to particular subjects.* Mathematics and music are two notable cases in point.

The object of the present survey was to test the mathematical capacity, distinct as far as possible from attainment and from general intelligence, for boys of average age of twelve years. A comprehensive survey was undertaken in 1916 in the United States by Agnes Low Rogers, who used a series of tests for diagnosing the mathematical ability of pupils in the third year of the Junior High School. The sextet of tests chosen was "designed to measure the more important phases of mathematical capacity demanded by high school mathematics and in particular the ability to manipulate numerical and algebraic symbols, the ability to grasp and handle spatial relations, and the ability to deal effectively with words.† It must be noted, however, that two of her tests are tests of verbal ability which correlate highly with general intelligence, and which are generally employed for the purpose of measuring general intelligence. After preliminary experimentation it was decided to incorporate some of Dr. Rogers' tests, after some necessary modifications had been made.

The tests employed by the present writer were as follows:

A.—*Arithmetic.*

(1) Interpolation. Twenty series of increasing difficulty were given, certain missing numbers in the series having to be written in, e.g.:

1 4 — 10 — — — 22

(2) Extra Number Test. Twenty lines of numbers were given, each line containing an extra number, differing in some form or other from the rest of the numbers in the line. This extra number had to be struck out, e.g.:

8 7 ~~16~~ 3 1 4

(3) Multiplication Test. Twelve examples of the multiplication of two numbers between 17 and 60 were required to be done according to a method shown, each line of the answer to be written down:

$$\begin{array}{ll}
24 & \\
\underline{23} & \\
400 & (20\times 20=400) \\
480 & (20\times 4=80+400=480) \\
540 & (3\times 20=60+480=540) \\
552 & (3\times 4=12+540=552)
\end{array}$$

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* C. Spearman: "The Nature of Intelligence and the Principles of Cognition," 1923, p. 4.

† A. L. Rogers: "Experimental Tests of Mathematical Ability and their Prognostic Value," p. 113.—Teachers' College, Columbia University, 1918.

B.—*Algebra.*

(1) Sixteen questions were given consisting of the simple manipulation of symbols, representing a simple application of the rules of arithmetic to literals, no previous knowledge of algebra being assumed.*

(2) Symbols Test. Thirty-six series of given facts were arranged, each series involving not more than four letters and the following three signs :

$>$ greater than, $<$ less than, $=$equal to.

It was required to fill in the relation between the first and last letters of each series, using these signs, and putting a line if the relationship could not be established from the given facts, e.g. :

$a=b>c>d$; therefore $a \qquad d$.

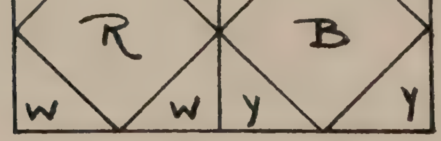
C.—*Geometry.*

(1) Thurstone "A" Test of Spatial Relations.† A geometric figure, lozenge-shaped, one edge printed a heavy black, and a circle in one corner was given. It was required, in twenty-four cases, to place a small circle in the corner where the hole would be if the card was placed in the indicated position.

(2) Thurstone "B" Test of Spatial Relations.† Similar to the previous one, with the exception that the diagram represents a card with two holes punched along one of the margins. A plus or minus sign had to be placed in the squares following the designs to indicate whether or not the diagrams represent the same face of the card.

(3) Thurstone Hand Test.† Forty-nine pictures of hands, in various positions, were given, and the pupil had to mark in a square beneath the diagram whether it represented a right hand or a left.

(4) Symmetry Test (Dr. Wynn Jones). A symmetrical pattern, coloured red, white, blue, yellow, was exposed for eight seconds, one minute being allowed for the reproduction of the pattern on squared paper. Eight patterns (one of which is shown) were used, each pattern being exposed three consecutive times :



B = Blue.
R = Red.
Y = Yellow.
W = White.

(5) Geometry Test. Ten shapes were given and it was required to show, by drawing in constructional lines, how the given figures could

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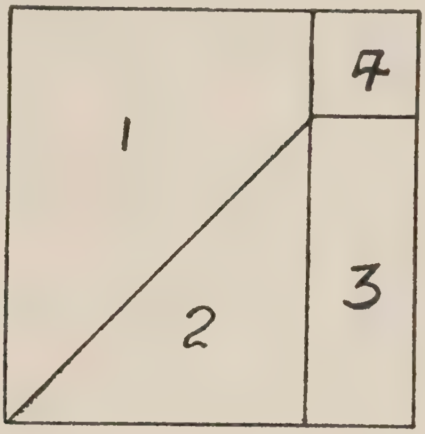
* cf. Rogers : "Tests of Mathematical Ability," p. 26.

† To be obtained from the C. H. Stoelting Co., Chicago.

be constructed by the correct arrangement of three of four given shapes which are formed by dividing a square up as shown :



D.—*General Intelligence.*

The Tomlinson " West Riding " Scale* was used as the standard for measuring general intelligence.

The experiments here recorded were carried out in February, 1925, at the Barrow Municipal Secondary School with fifty-one boys, and at the Blenheim Elementary School, Leeds, with forty-five Standard VII boys. My thanks are due to Mr. F. R. Barnes, M.A., head master of the Barrow Municipal Secondary School, to Mr. Whatmoor, head master of the Blenheim School, for affording me the facilities to administer the tests, and to Dr. Ll. Wynn Jones for valuable help and advice.

Having obtained the rank of each pupil in each test the inter-correlations between the various tests were calculated from Spearman's foot rule formula, and the values obtained transferred into product moment coefficients by means of the formula : $r=2\cos\frac{\Pi}{3}(1-R)-1$.

In order to obtain the relations between the various tests when the factor of general intelligence has been eliminated, recourse was had to partial coefficients, the usual formula being employed, viz. :

$$r_{12\cdot3}=\frac{r_{1\cdot2}\quad-\quad r_{1\cdot2}\quad r_{2\cdot3}}{\sqrt{1-r^2_{1\cdot3}}\quad\sqrt{1-r^2_{2\cdot3}}}$$

It was found that the inter-correlations of the tests of arithmetic and algebra gave a series of appreciable positive values, showing that there must be a factor common to all these tests. Similarly, a pronounced inter-correlation between the geometry tests was found, but low values were found to be the rule when the correlations between geometry and arithmetic were considered. The values obtained for the correlations between the arithmetic tests and those for general intelligence were for the most part appreciable, but those between geometry and general intelligence indicated that the power to deal with spatial relations does not show such a close relation with intelligence. The partial coefficients serve to point out more clearly that there are at least two definite groups into which the tests may be divided, such that the tests of each group are positively inter-correlated, while the partial correlations between the tests of one group and those of the other are remarkably low. The groups are the arithmetic group, in which may be combined the interpolation, extra number, multiplication, symbols, and algebra tests, and the geometry group which combines the Hand, Thurstone "A" and "B," the geometry and symmetry tests.

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* T. P. Tomlinson : " The ' West Riding ' Tests of Mental Ability." (Hodder and Stoughton, Ltd., London, 1923.)

To find the coefficient of correlation between a test and the pool of the tests (the test itself being excluded) use was made of the technique developed by Professor Spearman.* Thus:

where p=number of tests,
S_p=sum of correlations between test and each of the other tests in group,
S=total sum of correlations obtained by taking the correlation of each test with every other test in turn,

it follows † that $r_{(a_1 + a_2 + \ldots\ldots + a_p - {}_1)a_p} \cdot \dfrac{S_p}{\sqrt{p - 1 + S - 2\,S_p}}.$

In this way the following results were obtained, partial coefficients of correlation (general intelligence constant) being used:

Secondary Boys.	Interpolation :	Pool of rest of Arith.,	.40 ;	Pool of Geom.,	.18
	Extra Number :	,, ,,	.31 ;	,, ,,	.20
	Symbols :	,, ,,	.41 ;	,, ,,	.16
	Algebra :	,, ,,	.31 ;	,, ,,	.11
	Multiplication :	,, ,,	.43 ;	,, ,,	.18
Elementary Boys.	Interpolation :	,, ,,	.36 ;	,, ,,	.20
	Extra Number :	,, ,,	.24 ;	,, ,,	.11
	Symbols :	,, ,,	.06 ;	,, ,,	.35
	Algebra :	,, ,,	.41 ;	,, ,,	.13
	Multiplication :	,, ,,	.49 ;	,, ,,	.19
Secondary Boys.	Hand :	Pool of rest of Geom.,	.50 ;	Pool of Arith.,	.08
	Th. "A":	,, ,,	.49 ;	,, ,,	.21
	Th. "B":	,, ,,	.33 ;	,, ,,	.16
	Geometry :	,, ,,	.44 ;	,, ,,	.28
	Symmetry :	,, ,,	.50 ;	,, ,,	.16
Elementary Boys.	Hand :	,, ,,	.34 ;	,, ,,	.11
	Th. "A":	,, ,,	.31 ;	,, ,,	.23
	Th. "B":	,, ,,	.39 ;	,, ,,	.32
	Geometry :	,, ,,	.27 ;	,, ,,	.04
	Symmetry :	,, ,,	.62 ;	,, ,,	.34

The higher value of the coefficient of each test with the pool of the rest of the tests of its own group and the lower value of each test with the pool of the opposite group is here accentuated. Owing to the discrepancy of values obtained with the Symbols Test in the case of the elementary school boys, this test is now omitted.

Considering the groups of tests, viz., the "Arithmetic" Group (Interpolation, Multiplication, Extra Number, and Algebra Tests), and the "Geometry" Group (Geometry, Hand, Thurstone "A," Thurstone "B" and Symmetry Tests), the following values were obtained by the foot rule formula, "R" being transformed into "r" as before:

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* C. Spearman.—*Br. Jl. of Psychology*, Vol. V, Part 4, 1913.

† L. Wynn Jones.—*Br. Jl. of Psychology*, Vol. XV, Part 1, 1924.

	Secy. School.	Elem. Sch.
r Geom.-Arith. Groups	0.34 ±.107	0.34 ±.11
r Geom.-Intelligence	0.26 ±.107	0.46 ±.11
r Arith.-Intelligence	0.72 ±.107	0.66 ±.11

giving partial coefficients of correlation between the Geometry and Arithmetic Groups (general intelligence constant) of 0.23 and 0.55 respectively.

Here again the relation between arithmetical ability and intelligence is more marked than that between geometrical ability and intelligence.

The Algebra Test was then taken out of the Arithmetic Group and the correlations calculated as before, giving the following results:

	Sec. School.	Elem. School.
r (Arith.-Algebra)	.47 ±.107	.72 ±.11
r (Arith.-Geometry)	.28	.30
r (Algebra-Geometry)	.16	.35
r (Arithmetic-Intelligence)......	.73	.67
r (Algebra-Intelligence)	.45	.68
r (Geometry-Intelligence)	.26	.46

In both cases there is higher correlation between the arithmetical tests and the algebra test than between each of these and geometry. Calculating the partial coefficient for these tests as before, the partial of correlation (intelligence constant) between arithmetic and algebra was .23 for the secondary school boys and .49 for the elementary school boys; between arithmetic and geometry .14 and .012 respectively; and between algebra and geometry .05 and .057 respectively.

In conclusion, then, when the factor due to general intelligence has been eliminated, it is found that the connection between the various tests of arithmetic is such as to suggest specific arithmetical ability. The connection between the geometry tests also points to specific geometrical ability. It has also been shown that these two abilities are only loosely connected with each other.

These tests may be given comfortably during two school lessons and might profitably be given to the senior pupils in the elementary school or to pupils in their first year of a secondary school course, with a view to supplementing the results of the ordinary school examinations, or even the results of standardized tests of attainment in arithmetic or in mathematics. It would be futile to contend that the latter do not gauge mathematical ability with some accuracy, for there will always be a fairly close relation between aptitude and attainment. At the same time, it may well be that prognostic tests, similar to those mentioned above, would materially assist the teacher in grading his pupils. When it is remembered how largely arithmetical skill in the elementary school depends on the automatization and integration of a hierarchy of habits, it does not appear difficult for a first-rate teacher employing the most modern methods of drill to bring a moderately bright child to a high level of efficiency in the more mechanical parts of arithmetic. It becomes, therefore, the more necessary to study aptitude for the various problematic parts of secondary school mathematics and to frame psychological tests with this end in view. The reliability of such tests may be ascertained as well as improved by careful follow-up work for several years with the children tested.

Print-Script and Cursive-Script in Schools: An Investigation in Nervo-Muscular Re-adjustments.

By W. H. Winch.

IV.—A Third Experiment: School C. Girls.

i.—The Girls who did the Work.

The school which these girls attended was a municipal elementary school in the West End of London. The neighbourhood, socially, was somewhat mixed; the boys and girls from the best homes attended secondary schools, whilst the children from the poorer ones attended this elementary school. The mental level of the elementary school children was by no means high, though it was a very efficient school. The mental calibre of the girls was well known from a series of mental tests which had been administered for me over a number of years by the head mistress, who was a very good experimenter. Print-script, unjoined print-script, which is all that we have hitherto dealt with, had been taught to all the " standards " of this school for years as well as in the infants' department; indeed, these girls had never written anything else until after the Easter of 1924. Constrained by social pressure—the mistress had no convictions on the matter herself—she then commenced to teach an ordinary cursive style of handwriting, at the same time entirely giving-up print-script and no longer using it in any way in any lesson. Some seven or eight months later, we decided to test three or four of the school standards in print and writing to discover the relative facility of the girls in these two styles at that time.

ii.—The Administration of the Tests and the method of marking them.

Having some notion that a fifteen minutes' test, with the girls working as well and as fast as they could all the time, might unduly favour, when once the old system of movement was revived, that system of writing which, as it were, had been " ground in " by years of practice, I divided each test in this school into four parts; a few minutes' writing or printing; then complete rest for one minute with hands on heads and eyes closed; then more printing or writing; then another minute's rest; and then more printing or writing and so on. The girls of Standard VII started at the words " No magic dwelling-place in magic story, shut up in the heart of a thick wood " from " Dombey and Son," and wrote straight on from the book, with the intervals of rest aforementioned. The tests in this class were taken by me, beginning precisely at three o'clock on the 19th of November, 1924. In this class we began with cursive-script for four minutes, then we had a minute's rest, followed by four minutes' print-script, another minute's rest, followed by another four minutes' cursive-script, then another minute's rest, and a final four minutes' print-script after that. Standard VI also did a test on another day; but, as I muddled the instructions, I had to throw away the papers. Standard V was tested by me in the afternoon, as before, on December 10th, 1924, writing and printing from the "Royal Treasury of Literature" (page 184), " The Emperor's new," etc. There was first five minutes' writing, then one minute's complete rest, then five minutes' printing, another minute's complete rest, then five minutes' writing, another minute's rest, and a final five minutes' printing. Standard IV was taken by me, as before in the afternoon, on the 24th November, 1924. The girls transcribed from "Baldur the Beautiful," beginning at "High in the air leaped the roaring flame" (page 15). We commenced in this class by printing for five minutes, not writing, then we had the usual minute's rest, then five minutes' writing, a minute's rest, five minutes' printing, another minute's rest, and finally five minutes' writing.

Since we had made no preliminary attempt to find passages of equal difficulty for the print and cursive tests in this school, we endeavoured to minimize our possible errors in marking by counting *letters* correctly written, not words, as in the two experiments previously described. Any letter made cursively in print-script was crossed out, and any print-script letter in cursive writing was crossed out, as were also inaccurately made and illegible letters; though the criteria of inaccuracy was, I think, not applied so rigidly as in the City Ward boys' school.

iii.—Results.

I shall show the results compendiously in sections of each standard; but the necessary statistical checks will be worked out from the individual results, the marks being tabled to the nearest ten. The order of the pupils is obtained from the marks gained in the first test in print-script in each case, though this was not, in all cases, given first.

TABLE VI.

SHOWING, SECTION BY SECTION, THE AVERAGE NUMBER OF LETTERS CORRECTLY WRITTEN BY THE GIRLS OF STANDARD VII IN PRINT-SCRIPT AND CURSIVE-SCRIPT RESPECTIVELY, CALCULATED FROM THE INDIVIDUAL MARKS TO THE NEAREST TEN.

Marks obtained in 1st Test in Print-script.	Number of Girls.	Average mark in 1st Test (Print-script).	Average mark in 1st Test (Cursive-script).	Average mark in 2nd Test (Print-script).	Average mark in 2nd Test (Cursive-script.)	Total Averages in	
						Print.	Writing.
200 to 250	7	21	18	23	18	44	36
150 to 200	14	17	16	18	14	35	30
100 to 150	9	13	14	15	14	28	28
Averages from individual figures to the nearest tens		16.6	15.7	18.1	15.0	34.7	30.8

COMMENTS ON TABLE VI.

(1) Notwithstanding complete abstention from print-script for seven months, the cursive-script does not at present show the same facility as print-script.

(2) The difference is seen very clearly in the higher sections of the class; for the good writers are more affected relatively by the change of style than the poor ones, as far as facility is concerned; those with whom the old system had become more mechanized and rapid lose relatively more from a change in style though they are still the fastest writers, even in the new style.

(3) The "r" correlation coefficient between the two series of total individual results is .74; the difference between the means of the two series is 3.9 whose probable error is .56, which is only one-seventh of the mean difference.

(4) Two girls in this class, D.P. and G. H., who did the tests, are not included in the summarized tables or in the calculations from the individual results. D.P. had learnt to write at home: her writing mark was 397: her printing mark was 353. G.H. had learnt printing for a few months only: she had previously attended another school where cursive-script was taught; her writing score was 285: her print-score was 191.

(5) Cursive-script shows a significant loss from the present facility of print-script (entirely unpractised for seven months) of 11 per cent.

a.—Conclusions from the Work of Standard VII.

These Standard VII girls, after seven months exclusive practice and teaching of cursive-script, have not attained the level of facility which they still retain from the print-script which they had previously learnt. There are indications that those who wrote print-script with the greatest facility have suffered more relatively from the change than those who wrote it with the least facility, though the former are still the faster writers in both styles. I pass now to the work of Standard V.

TABLE VII.

SHOWING THE AVERAGE NUMBER OF LETTERS CORRECTLY WRITTEN BY THE GIRLS OF STANDARD V IN PRINT-SCRIPT AND CURSIVE-SCRIPT RESPECTIVELY, CALCULATED TO THE NEAREST TENS.

Marks obtained in the 1st Test in Print-script.	No. of Girls.	Av. Mk. 1st Test Print.	Av. Mk. 1st Test Writing.	Av. Mk. 2nd Test Print.	Av. Mk. 2nd Test Writing.	Total Averages.	
						Print.	Writing.
180 to 200	5	19	18	21	17	40	35
150 to 180	6	17	16	17	17	34	33
140 to 150	7	15	16	18	15	33	31
130 to 140	8	13	14	16	14	29	28
110 to 130	6	12	12	12	11	24	23
80 to 110	4	10	12	11	11	21	23
Averages calculated from the individual figs. to nearest tens.		14.4	14.7	16.0	14.3	30.2	28.8

COMMENTS ON TABLE VII.

(1) Notwithstanding complete abstention from print-script for seven months, the cursive-script is below the present facility of print script.

(2) The differences are smaller with these girls than with those of Standard VII, and, as in that class, are less marked among the less facile writers than among the more proficient; in the lowest section, indeed, the cursive-script record has surpassed that of the print-script.

(3) The "r" correlation coefficient between the two series of total individual results for the two styles is .68, the mean difference is 1.4, with a "probable error" of .56.

(4) There is a significant loss of 5 per cent. on the present facility in writing print-script after seven months' abstention.

(5) Three girls who worked the tests in this class were excluded because they had learnt cursive-script at another school before commencing attendance at this one. Their marks respectively were 427, 342, and 266 for writing as against 400, 272 and 236 for printing.

b.—Conclusions from the Work of Standard V.

These Standard V girls, after seven months' exclusive teaching and practice of cursive-script, have not attained the level of facility which they still retain with the print-script which they had previously learnt, and which they had entirely given up. But the difference in facility is not as great as that in Standard VII. There are again indications that the faster writers in print-script have suffered more loss relatively than the slower from a change in style, though they are still the faster writers, even in the new style.

I pass now to the work of Standard IV.

TABLE VIII.

SHOWING, SECTION BY SECTION, THE AVERAGE NUMBER OF LETTERS CORRECTLY WRITTEN BY THE GIRLS IN STANDARD IV IN PRINT-SCRIPT AND CURSIVE-SCRIPT RESPECTIVELY, CALCULATED FROM THE INDIVIDUAL MARKS TO THE NEAREST TEN.

Marks obtained in 1st Test in Print-script.	No. of Girls.	Av. Mk. in 1st Test Print.	Av. Mk. in 1st Test Writing.	Av. Mk. in 2nd Test Print.	Av. Mk. in 2nd Test Writing.	Total Averages in Print.	Total Averages in Writing.
Over 150	3	16	11	12	11	28	22
100 to 150	6	11	9	11	9	22	18
80 to 100	8	9	8	8	8	17	16
60 to 80	11	7	7	7	7	14	14
Below 60	4	5	6	6	6	11	12
Averages calculated from the individual figs. (nearest tens)		9.7	8.3	8.6	8.2	17.3	16.6

COMMENTS ON TABLE VIII.

(1) Eight girls who are normally in attendance in this class were absent at a domestic centre. They were, of course, among the older of the pupils, and the teacher thought the marks for the class would have been higher had they been included. I was rather inclined to the opposite view ; but not strongly, as far as nervo-muscular activities were concerned. In any case, neither the total marks nor the balance of marks in favour of print-script can be taken as exactly correct for this standard.

(2) Again, notwithstanding complete abstention from print-script for seven months, cursive-script does not, at present, show the same facility as print-script ; though cursive-script has been exclusively used during that period.

(3) As before, the differences are most clearly marked among the faster writers, indeed, in the lowest sections, there is either equality or gain in favour of cursive-script.

(4) The " r " correlation coefficient between the two series of totals of the individual results in print-script and cursive-script respectively is .80 : the difference between the means is .7 in favour of print-script, with a " p.e." of the mean difference amounting to .38.

(5) Cursive-script, considering the class as a whole, shows a very doubtful loss (for the " p.e." is high in relation to the mean difference) from the present facility of print-script of approximately 4 per cent.

c.—Conclusion from the Work of Standard IV.

These girls of Standard IV, after seven months of exclusive teaching and practice of cursive-script, have not yet attained the level of facility which they still retain in the print-script which they had learnt previously. There are again indications that the girls who had more thoroughly acquired facility in print-script suffer more loss relatively than those whose facility was less, though the former are still the faster writers in both styles.

III.—GENERAL CONCLUSIONS FROM THE THIRD EXPERIMENT.

School C. Girls.

(1) Literal errors of any kind, error, omission, insertion or inaccuracy, were not numerous ; but more print-script letters were made in the cursive-script than vice versa.

(2) As far as these three classes, Standards VII, V, and IV, are concerned, there is considerable dislocation and loss of facility owing to a change of style : it is more marked in Standard VII than in V, and in V than in IV, and the more facile writers in print in all classes show it more than the slower ones.

(3) It would seem, therefore, desirable, if a change must be made, to make it early in the school life of the child.

V.—A Fourth Experiment. School D. Boys.

i.—The Boys who did the Work.

This school had an enrolment of some 400 boys ; it was a large school, as things are now in London. It was an elementary municipal school situated in the East End of London, but not in a slum, and was attended, though not quite exclusively, by Jewish children. The mental ability of Jewish children is higher, age for age, than that of Christian children of the same social class ; though, speaking rather from experience and opinion than from knowledge, I incline to the view that, in manual dexterity, the reverse relationship may hold, or at least a relationship of equality. The school, considered as a whole, was, at this time, in fairly good condition ; but several of the assistant masters had been promoted to headships during the few preceding years, the abler men had been moved towards the top of the school, the lower standards were by no means strong in any of their work, and the pace of their mechanical work was very slow. On entry into Standard IV a beginning was to be made in teaching cursive-script ; for nothing but unjoined print-script had previously been taught to these boys in either the boys' or infants' departments (kindergarten and lower primary). The man who took over these boys was a first-rate, experienced teacher, who, whilst clear, slow and thoughtful, in *all* his teaching, nevertheless took a high *tempo* in his mechanical work after the perceptual and constructive difficulties had once been surmounted. If there was any force in the contention advanced in the general introduction to these researches that we cannot come to any adequate decision as to method without substantial equality in teachers, we ought to find, on this occasion, a somewhat different result from those formerly obtained, for the teachers under whom these boys had passed their previous two years were young and relatively untrained.

ii.—The Tests, their Administration and Marking.

The teaching of cursive-script began on April 28th, 1924 ; and, though for a month or so, whilst the boys were slowly and carefully acquiring the forms and junctions of the letters of cursive-script, *some* exercises had been written in print-script, for six months prior to the first set of tests, which were given in December, 1924, and were administered by me (subsequent tests were given by the teacher) print-script had been entirely given up. Marks were given for each letter correctly written as in the previous experiment.

iii.—Chronology of the Series of Tests.

Teaching of cursive-script began on April 28th, 1924.

First test in cursive-script for five minutes, beginning at 2-38 p.m., December 3rd, 1924 ; one minute's complete rest.

First test in print-script for five minutes, December 3rd, 1924 ; one minute's complete rest.

Second test in cursive-script for five minutes, December 3rd, 1924 ; one minute's complete rest.

Second test in print-script for five minutes, December 3rd, 1924.

The boys transcribed from "Sinbad the Sailor," page 71, beginning : "I found that I was upon a large broad hill, covered all over," etc., and went straight on after each minute's interval of rest.

Third test in print-script for five minutes, beginning at 2-30 p.m. on December 16th, 1924 ; one minute's rest.

Third test in cursive-script for five minutes ; one minute's rest.
Fourth test in print-script for five minutes ; one minute's rest.
Fourth test in cursive-script for five minutes.
A six months' interval without tests.
Fifth test in cursive-script for fifteen minutes from 9-5 to 9-20 a.m., June 10th, 1925.
Fifth test in print-script for fifteen minutes from 9-5 to 9-20 a.m., June 11th, 1925.
Sixth test in print-script for fifteen minutes from 9-10 to 9-25 a.m., July 15th, 1925.
Sixth test in cursive-script for fifteen minutes from 9-10 to 9-25 a.m., on July 16th, 1925.

iv.—Results.

The marks for the first and second cursive tests were added and tabulated to the nearest ten ; those for the first and second print tests were also added ; also those for the third and fourth print tests and those for the third and fourth tests in cursive-script, and treated similarly. " Initial spurt," which may influence these results, will thus be allowed for. The results of the fourth and fifth tests in both styles, which were fifteen minutes' tests and took place on different days, will not be added. The marks for them, like those of the added shorter tests, will be tabulated to the nearest ten. The results follow :

Table IX.

Showing, section by section, the average number of Letters Correctly Written in Cursive and Print-Script respectively throughout the experiment by the Boys of Standard IV. School D. Boys.

Marks in 1st and 2nd cursive tests to nearest tens.	No. of Boys.	Average age in years and months. yrs. mths.	Av. mk. 1st and 2nd (cursive) 10 mins.	Av. mk. 1st and 2nd (print) 10 mins.	Av. mk. 3rd and 4th (cursive) 10 mins.	Av. mk. 3rd and 4th (print) 10 mins.	Interval of six months.	Av. mk. 5th (cursive) 15 mins.	Av. mk. 5th (print). 15 mins.	Av. mk. 6th (cursive) 15 mins.	Av. mk. 6th (print). 15 mins.
30 and over	4	9 8	34	26	33	35		58	56	64	69
25 to 30	8	10 0	26	18	30	26		55	45	56	54
20 to 25	19	9 7	23	16	23	22		50	41	53	48
15 to 20	10	9 8	17	12	23	21		46	35	45	44
Below 15	5	9 4	12	10	22	17		43	33	41	42
Av. mk. per boy calculated from individual figures to the nearest tens. .			22	16	25	23		50	41	51.4	49.6
			37% gain.		9% gain.			22% gain.		3½% gain.	

COMMENTS ON TABLE IX.

(1) After cursive-script had been taught for eight months, and print-script entirely given up for the last six of these months, these young boys of Standard IV in Tests 1 and 2, show decidedly more facility in cursive than in print-script. In Tests 2 and 3, given thirteen days later, cursive-script is still written with greater facility, though the percentage gain on the print-script, indeed, is very, very much reduced. After an interval of six months without any practice in print-script, the percentage gain by cursive-script rises seriously ; and, five days later, falls very seriously, and the lower sections show very little difference between their two scores.

(2) The " r " correlation-coefficient has been calculated for the two series of marks in the 6th test in both styles, and amounts to .78, the difference between the means is 1.8 with a " p.e." of 1.1.

(3) After 15 months' exclusive teaching of cursive-script these boys show a gain of 3½ per cent. on their print-script record taken at that time ; but this gain is not statistically significant.

(4) The print-script records are very low at first and rise markedly after the speed-tests given by their present teacher ; then, with six months' abstention from tests (and, of course, no other practice in print-script) the cursive gain is again very great, falling markedly five days afterwards.

v.—Conclusions from the Work of Standard IV-V.

The work of this young class, entering Standard IV at an average age of 9 years 9 months, in eight months after beginning cursive-script, shows much more facility (which afterwards diminishes) in the cursive style than in the unjoined print which had been discarded. It was the opinion of the head master that their first record in print-script (see Table IX) did not fairly represent what boys of their age and ability ought to have done in print-script at that time, even though they had completely discarded it for six months. We attributed this low result, partly of course, to complete discontinuance, and partly to the fact that under their teachers in Standards III and II (the lowest classes in the boys' department) all their work had been done somewhat slackly and at a low pace. That they knew their print-script quite well is shown by their next record and by the results of the 6th test, six months afterwards, when their pace in print approximated rather closely to their pace in writing.

That, after fifteen months, they were superior in facility for cursive-script to that for print-script at that time is statistically doubtful, and their earlier gains are to be attributed, partly to the relatively early age at which they discontinued print, and partly to the fact that in Standards II and III, their print-script period, they had never been extended, and had not printed at any pace. Time is required, and some practice in print speed tests, before the transfer of pace under their new teacher seriously affects the speed of their old style, which, it must be remembered, has (but for the speed tests) been entirely discontinued.

VI.—A Fifth Experiment. School E. Girls.

i.—A New Problem: Unjoined print-script versus Joined.

Some of my readers, I am sure, will have noticed that I have only given, so far, some measure of dislocation and delay when unjoined print-script is, as it were, more or less "scrapped," and replaced by a cursive style which is new, and which is not, strictly speaking, a development of a joined-up style from the unjoined literal style which the boys and girls have already learnt. The intention of those who advocate print-script is that it shall itself become cursive to a certain extent, by the joining of all the letters, or at least of some of them, within the same word, with such modifications of the literal print forms as may be necessary. There is force in this contention; though if I did not intend to accept it provisionally, two kinds of counter-arguments could be used, one practical, the other theoretical. Practically, I have dealt with the actual question as it exists in the schools to-day. Unjoined print-script is not, in the vast majority of cases, developed into a more or less cursive-style of its own; it is discarded as a style of writing near the top of the school (though sometimes retained for use in written arithmetic, and very often for use in map-drawing) and a new style, completely cursive, is taught in its place, on the ground that children must learn to write before they leave school. Head teachers who adopt this plan assert that unjoined print-script *will not join up*, or if it does, will *not* develop into a really cursive style. Other head teachers, however, say that the bare forms of the unjoined print-script letters, or many of them, *can* have "serifs" (lines of approach and termination), attached to them without difficulty which *will* yield a style apparently cursive. The balance of opinion numerically is against the latter, though in matters of science, that does not and should not count. Then there is the theoretical argument. Is there more or less interference when a set of habitual movements is retained as a whole, and only small departures made here and there by additions and very slight modifications, than when a newer set of movements, rather radically different, is taught in order to replace the already habituated ones? Head teachers who, finding the writing of their schools unsatisfactory, determine to change their style of writing, do so rather radically, on the ground that, by so doing, the older and worsened forms, perhaps degraded by practice, will interfere less with the new style than if they endeavoured to set the old style right. They may be right, they may be wrong, I do not know. But they would not, I think, contend that there was not a greater loss of facility in the former case than in the latter. And facility, provided that due legibility is secured, is a very important feature, possibly the most important feature of hand-writing in schools. As usual, all these practical and theoretical arguments, on both sides, especially when considered in isolation, have a large measure of truth. I will endeavour, at least, to make some attempt to test one of the issues involved, namely, the extent and duration of the dislocation or loss of facility which occurs when an attempt is made, in the closing years of elementary school life, to join up, or mostly join up, the unjoined letters of the print-script hitherto taught.

ii.—The Girls who did the Work.

The girls who did the work, now to be described, attended a small municipal girls' school in Limehouse. It was a "very poor" school, though the economic circumstances of the children's parents had considerably improved during the European war. The head teacher and assistant staff were extremely capable, and the school had a high reputation pedagogically. The mental level of the girls was well known to me from a number of mental tests which had been worked from time to time. It was decidedly low on the whole: very, very few girls reached either scholarship or even central school level. But the drawing, handwork (including needlework), and unjoined print-script were very carefully, creditably, and clearly done. Quite recently, in 1924, the head mistress decided to join up the unjoined print-script. Very few of her girls obtained employment in clerical work on leaving school, but for a time, at any rate, they did employ writing socially, and attempted to write the ordinary cursive-script used, or misused, by adults. One of them remarked that the school printing was "kids' stuff." Now that they were becoming women they were putting away childish things. They wrote cursive-script disgracefully, as might have been expected, and this was a potent factor in inducing the mistress to have her unjoined print joined up in Standards VI and VII.

iii.—Chronology of the Tests, their Administration and Method of Marking.

After writing nothing else during their school-life but unjoined print-script, these girls, forming one class under a very able assistant mistress, since promoted to a head-ship, began to be taught to join up the separate letters (as far as practicable) within the words: but they retained their unjoined style for use in all written arithmetic and in map-drawing, of which there was rather less than one lesson a month; all other written work was done in joined-up print-script. The change in style was begun in October, 1924, for the girls of Standard VII, and in April, 1925, for those of Standard VI. On May 6th and May 7th, 1925, a first pair of tests was given in both unjoined and joined print-script. On the morning of the tests, the girls were instructed that, when they came to school, they were not to run about in the school play-ground, but to come into the school-hall and sit quietly down until 9 o'clock. Then they had their usual prayers and hymns, and at 9-10 a.m. precisely (all times being marked with the seconds hands of a reliable watch) they began to transcribe a piece of prose from their ordinary reading book for exactly fifteen minutes. Next morning (a Thursday, I have not used Monday morning for my tests, the work is too unreliable after Saturday and Sunday), a similar passage, with precisely the same procedure, and for the same time, namely fifteen minutes, was transcribed in joined-up print-script. The girls were instructed to write as fast as they could without making their letters wrongly, or joined-up if they should have been unjoined, or unjoined if they should have been joined up. One mark was given for each word correctly transcribed in which no literal error occurred.

A second pair of tests was given in unjoined and joined-up print-script about six weeks later, namely, on the 17th and 18th of June, 1925. On the 16th of June, a " full inspection " took place in this school; and there were four inspectors present all day; the days for the tests in writing had, however, been fixed beforehand, and could not easily be altered.

The effect of this inspection on the work of the school next day was almost as prejudicial as that of a school excursion. The *same* pieces of prose were transcribed as before; but, on this occasion, the passage previously written in unjoined print-script was written in joined-up script and vice versa.

A third pair of tests in unjoined and joined print-script was written about three weeks later, namely on the 8th and 9th of July, 1925, under precisely the same conditions. The *same* pieces of prose were transcribed as before; but now the passage previously written unjoined was joined up and vice versa.

iv.—Results.

TABLE X.

SHOWING, SECTION BY SECTION, THE AVERAGE NUMBER TO THE NEAREST UNIT OF WORDS CORRECTLY WRITTEN BY THE GIRLS OF STANDARD VII IN UNJOINED AND JOINED-UP PRINT-SCRIPT RESPECTIVELY.

Marks obtained from the 1st Test in unjoined Print-script. 15 mins.	No. of Girls.	Av. Mark for 1st Test in unjoined Print.	Av. Mark for 1st Test in joined Print.	Av. Mark for 2nd Test in unjoined Print.	Av. Mark for 2nd Test in joined Print.	Av. Mark for 3rd Test in unjoined Print.	Av. Mark for 3rd Test in joined Print.
120 to 140	4	132	87	104	93	100	87
100 to 120	7	110	88	90	79	101	95
80 to 100	4	91	77	93	90	101	81
60 to 80	4	70	65	89	81	92	82
Averages to the nearest unit calculated from the individual results		101	81	95	85	99	87
		Loss of 20%		Loss of 10%		Loss of 13%	

COMMENTS ON TABLE X.

(1) These Standard VII girls, who had begun, eight months before the first pair of tests, to write joined-up print-script, meanwhile, to a slight extent, retaining in use their unjoined print-script, show a loss of facility of 20 per cent. in their first pair of tests, of 10 per cent. in their second pair, and of 13 per cent. in their third pair, which were dated ten months after they began to join up.

(2) The figures for the second test in unjoined print are lower than they would have been had not a " full inspection " occurred the day before : it is, perhaps, not entirely without significance that the quicker writers went down and the less facile went up ; and the ten per cent. difference between that and the next day's test in joined-up print-script is certainly too small.

(3) The " r " correlation coefficient calculated between the two series of marks for the third test in joined and unjoined print-script is .58 : the difference between the means is 12, with a " probable error " of 2.5.

(4) There is a significant loss on the present facility of unjoined print of about 13 per cent.

(5) Joined print rises in facility, during the period covered by the tests, from 81 to 85 to 87 : unjoined print falls from 101 to 95 to 99, a very slight fall ; the low figure of 95 has already been accounted for.

(6) The indications are not so regular in this class that the less facile writers in the habituated style suffer less loss than the faster ones from a change in style ; but they certainly exist, and are very marked indeed if the first test in unjoined print and the last test in joined-up print are taken as criteria.

v.—General Conclusions from the Work of Standard VII : School E. Girls.

These girls of Standard VII, who are not of high mental ability, after having learnt to join up their print-script for ten months, without, however, entirely giving up unjoined print-script, show a loss in facility from their present record in unjoined print of about 13 per cent. ; the facility for unjoined print is falling : that for joined-up print is rising. It cannot be said that the dislocation is less or greater than it would have been had a change been made to cursive-script as usually understood : an experiment must be arranged *ad hoc* for a decision on that question : all that can be said is that it is considerable. I turn now to the work of Standard VI, and give the results.

TABLE XI.

SHOWING, SECTION BY SECTION, THE NUMBER OF CORRECT WORDS, CORRECTLY WRITTEN, BY THE STANDARD VI GIRLS OF SCHOOL E, COMPARED IN UNJOINED AND JOINED-UP PRINT-SCRIPT RESPECTIVELY.

Marks obtained from the 1st Test in unjoined Print-script.	No. of Girls.	Av. mk. 1st Test unjoined Print.	Av. mk. 1st Test joined Print.	Av. mk. 2nd Test unjoined Print.	Av. mk. 2nd Test joined Print.	Av. mk. 3rd Test unjoined Print.	Av. mk. 3rd Test joined Print.
120 and over	5	135	77	91	81	95	87
100 to 120	6	111	65	73	86	67	71
80 to 100	10	89	65	76	73	75	68
Below 80	7	70	55	77	66	68	62
Averages calculated to nearest unit from the individual results		97	65	75	73	75	70.4
		33% loss.		3% loss.		6% loss.	

COMMENTS ON TABLE XI.

(1) These Standard VI girls, the great majority of whom did not begin to learn joined-up print-script until April, 1925, keeping unjoined print in being to some extent by occasional use, show a loss of 33 per cent. in facility in their first pair of tests, of 3 per cent. in the second pair of tests, and of 9 per cent. in their third pair of tests.

(2) The score for the second test in unjoined print is lower than it should have been—a result due to the same circumstance as that affecting the girls of Standard VII, the percentage of difference between that and the next day's work in joined up print-script is certainly too small : it is again worth noting, that comparing this result with that of the 1st test in unjoined print-script, it is the abler children who have suffered most. The slowest section have apparently been stimulated, rather than over-wrought. by the excitement of the preceding day.

(3) The " r " correlation coefficient calculated between the two series of marks for the third pair of tests is .78. The difference between the means is 4.6 with a " p.e." of 1.9.

(4) There is a significant loss in the facility of unjoined print at the time of the third pair of tests compared with that for joined print of 6 per cent. The decline in facility from the 1st tests in unjoined print-script given three months before is 27 per cent.

(5) Joined print is rising in facility, though irregularly, whilst unjoined print is falling, also irregularly.

(6) Indications appear also in this class that it is the less facile writers who suffer relatively less from. a change in style ; when the first result in unjoined print is compared with that of the third test in joined print, this feature is very marked.

vi.—General Conclusion from the Work of Standard VI : School E. Girls.

These girls of Standard VI, who are not of high mental ability generally, but whose mechanical work *is* of a high order, though not fast, after learning to join up their unjoined print-script for three months, are considerably below their present record in facility for unjoined script, and very, very seriously below their record in unjoined print made a couple of weeks after the beginning of their work in joining up. They have made less progress in re-adjustment than Standard VII absolutely, as they have had much less practice in joining up, but their rate of adjustment relatively to unjoined print is faster.

VII.—A Sixth Experiment : School F. Girls.

i.—Unjoined print verses joined : Second experiment.

This, the sixth experiment, is a second attempt to estimate what occurs when joined-up print-script follows upon unjoined print. I say joined up, but several literal shapes of print-script will not join up, for example, " o " and " s," " b " and " g," without such modifications as would destroy the original shape of the letter ; it must be understood that several letters, therefore, remain identically the same and without " serifs " in both systems. " Top joins," at least in this school, are regarded as a feature of cursive-script, and are never employed. One important difference exists between this and the preceding school ; the joining up began earlier, and not in the first class itself, as it did in School E.

ii.—The Children who did the Work.

This school was a small municipal school in the City of London (the city proper) now attended, as are many of the schools in the Boston, U.S.A., central city district, exclusively or almost exclusively, by Jewish children. I need not repeat what I have already said as to the general characteristics of Jewish children. It was a well-established school, but with falling numbers. The first class consisted of Standards VII and VIa, the children who did the tests about to be recorded. With the three exceptions of children who entered this particular class or group of children later, all the children of Standard VII had learnt joined print for two years, having previously learnt nothing but print-script ; though, during the period referred to, they had, to some extent, " kept up " unjoined print-script by using it in written arithmetic and in very, very occasional lessons in map-drawing. Of the three children who entered the class later no child had been taught joined-up print-script for less than one year. There was one factor which, though small, may have disturbed some of our results a little, for a few of these Jewish girls had tried to write cursive-script at home. The girls of Standard VIa had " joined-up " for one year only.

iii.—The Tests, their Administration and Method of Marking.

Two tests only were given. They were given by me, quite unexpectedly, in the absence of the head mistress, on Friday, the 19th of September, 1924. The girls of the 1st class, Standards VII and VIa, were told that they were to be required to write an unseen passage from a reading book for a few minutes, that they were to write as fast as they could, but that any word incorrectly copied would lose them a mark, and that, as they were going to write in unjoined script, any letters joined up would lose them marks and indeed, any letter which was not clearly and distinguishably made. They started off with unjoined print for five minutes from 11 to 11-5 a.m. Then there was an interval of seven minutes, during which time they rested, occupying themselves how they would, except in writing. Then, *mutatis mutandis*, similar instructions were given as to joined-up print-script and the girls transcribed another passage from 11-17 to 11-22 a.m. I thought that, by giving a long interval, I might largely discount the factor of initial spurt ; or rather that I might get two exercises, both with initial spurt, since the first test was so short. Of course, with a long series of tests the pace becomes more uniform thoughout, the ups and downs become, as it were, a steady swing, but I did not contemplate a long series unless the results were very irregular. The teacher who marked the papers did so meticulously ; a closed " e," for example, was marked as an error in both systems, as well, of course, as the insertion or omission of letters, and the use of unjoined letters, if they should, according to the school style, have been joined, and vice versa. Both the unjoined and the joined print were of a high quality.

iv.—Results.

TABLE XII.

SHOWING, SECTION BY SECTION, THE AVERAGE NUMBER, TO THE NEAREST TEN, OF CORRECT LETTERS CORRECTLY WRITTEN, BY THE GIRLS OF STANDARD VII : SCHOOL E GIRLS, TOGETHER WITH THE NUMBER OF LITERAL ERRORS IN UNJOINED AND JOINED PRINT-SCRIPT RESPECTIVELY.

Number of Marks for unjoined Print-script.	No. of Girls.	Average Mk. unjoined Print.	Average Errors in unjoined Print.	Average Mk. joined Print.	Average Errors joined Print.
Over 250	4	32	3	33	8
200 to 250	7	24	3	30	6
Under 200	3	18	3	28	4
Averages calculated from actual figures (nearest tens)		24.9	3	30.3	6

COMMENTS ON TABLE XII.

(1) In two years, these girls of Standard VII have quite distinctly acquired more facility in joined-up print-script than their then record in unjoined print. There is no record for what they could have done in unjoined print before they began to join up, or in the early stages of joining up. The head mistress thought there was considerable loss at first, but that is only opinion. There is no doubt about their present facility in joined-up print-script; but the percentage of error in joined-up print is much greater than in unjoined print; it is, in fact, almost twice as great.

(2) The " r " correlation coefficient between the two series of individual results (calculated from the nearest tens) in joined and unjoined print is .43 : the difference between the means is 5.4 (which really means 54 letters in five minutes) in favour of joined-up print at that time, with a " p.e." of 1.0.

(3) Again, it should be noted that it is the less facile writers in unjoined print-script who have made the greatest percentage gain in joined-up print, though they are still the less rapid writers.

(4) There is a statistically significant gain of 22 per cent. by joined-up print on the unjoined score taken two years after the unjoined is almost discontinued and the joined-up forms employed.

v.—General Conclusion from the Work of Standard VII : School E. Girls.

After two years' teaching and practice of joining up, unjoined print being somewhat maintained in being by a little regular, and some occasional practice, the girls have quite definitely reached a stage in which their facility in joined-up print-script is much greater than in the unjoined form. Those whose marks are lowest for unjoined print have a much greater percentage increase than those whose marks are higher. That the phenomenon does not arise from the fact that the girls now low in unjoined print were formerly relatively high is shown in the previous experiment for which we had earlier records. I pass now to the lower section of the class.

TABLE XIII.

SHOWING, SECTION BY SECTION, THE AVERAGE NUMBER (FROM THE NEAREST TENS) OF LETTERS CORRECTLY WRITTEN, BY THE GIRLS OF STANDARD VIa, SCHOOL E, GIRLS, TOGETHER WITH THE AVERAGE OF THE ACTUAL NUMBER OF LITERAL ERRORS IN UNJOINED AND JOINED PRINT-SCRIPT RESPECTIVELY.

Number of Marks for unjoined Print-script.	No. of Girls.	Average Mk. unjoined Print.	Average Errors in unjoined Print.	Average Mk. joined Print.	Average Errors in joined Print.
Over 250	2	32	2	31	15
200 to 250	5	22	3	25	5
Under 200	3	16	5	19	4
Averages calculated from the actal figures (nearest tens) . .		22.4	3	24.1	6

COMMENTS ON TABLE XIII.

(1) After one year, these girls of Standard VIa have acquired more facility in joined-up print-script than is shown by their score in unjoined print-script at that time. Their score in unjoined print is definitely lower than that of Standard VII (Table XII) and their joined-up print shows a smaller percentage increase on their unjoined print. They are, of course, younger girls, and have had, therefore, a shorter period, though still a long one, for the unjoined print to be " ground in " by habituation. But their " joining up " had been taught and practised for *one* year only, not for two, as in Standard VII.

(2) The " r " correlation coefficient between the two series of individual results (calculated from the nearest tens) in joined and unjoined print is .90 ; the difference between the means is 1.7 (which really means 17 letters in five minutes) in favour of joined-up print at that time, with a " p.e." of the mean difference amounting to .56.

(3) Again it may be noted that the less facile writers in unjoined print show a higher percentage of improvement than the more rapid ones, though the latter are still the more facile writers in both styles.

(4) The errors in joined-up print-script, at the end of one year, are more numerous than in unjoined print ; they are, in fact, about double the number on the average.

(5) There is a significant gain of 8 per cent. by the joined-up print on the unjoined form when the score is taken one year after the unjoined form is almost discontinued and the joined up form employed.

vi.—General Conclusion from the Work of Standard VIa : School E. Girls.

After one year's teaching and practice of joining-up, unjoined print being somewhat maintained in being, these girls have reached a stage in which their facility for joined-up print-script is greater than for the unjoined form. Those whose marks are relatively low in print-scrip show a much larger percentage of re-adjustment than those who have higher marks. The errors in unjoined print are, even after two years, still less than in the joined-up variety. These girls show a smaller relative increase than the girls of Standard VII. They are, of course, younger, and consequently, more amenable to nervo-muscular re-adjustments, and they have had about a year's less mechanization in the unjoined form. But they have had only *one* year's practice in their new form ; consequently the general conclusion that younger children who are less proficient in their old style show, with *equal* practice in their new style, a larger percentage of re-adjustment than older ones, is not invalidated.

VIII.—SUMMARY AND CONCLUSION.

What then is the upshot of the whole matter ? Perhaps, it may be advantageous first to state what is not proved. It is not proved that print-script, joined or unjoined, is more or less facile than cursive-script. It may be faster, it may be slower, and the variations in pace from school to school, and from class to class, shown in the preceding investigation, give justification to the suggestions made in the theoretical introduction. I did not accept the figures on which conclusions as to the relative facility of the different styles had been based. For unless the nervo-muscular potentiality for this work is approximately equal among the different groups of children tested, unless their teachers are equal in capacity and forcefulness, unless these teachers take their mechanical work at an approximately equal tempo, whatever that mechanical work may be, unless equal stress is laid on writing (in its various forms) and equal time given to it in the schools tested in the form of lessons in printing or writing, dictation, English written composition, and answers to geographical, historical, and other questions, there is little solid ground on which to base any conclusion at all.

I am aware it is asserted that, if we spread the net widely enough, we shall catch as many of one kind as of another, and that our varying conditions are as likely to be as favourable to one style as another, and so can be disregarded. I mistrust the method in all cases, and I have given special reasons for believing that it will not work in such an investigation as the relative facilities of print and cursive-script. True it is, that if the result for each age-group or even each standard group within each school were given separately, their averages calculated and the means of these averages calculated, first in one style and then in another ; and, finally, the probable error of the differences between the means calculated, there might be good statistical ground for coming to a general conclusion. But even then, all that these statistics can do is to show us that there may be a general tendency ; the question is still open as to the interpretation of the cause of this general tendency, if it exist.

But even if we knew that print-script were easier and faster than cursive-script or vice versa, that is not the problem as it is actually presented to us to-day. We want to know what happens when one style of printing or writing, at some time in the child's school career, is changed for another ; for it is generally agreed that a child must leave school able to write cursive-script or some form of joined-up print which adequately resembles writing, and will be regarded socially as such. It is a problem of nervo-muscular re-adjustments. Teachers and others have frequently been willing to admit that there is some loss in facility when one style is changed to or developed into another. But what they were not prepared for (I was not myself) is the very serious dislocation and loss of facility which this investigation sets forth.

In the first experiment, carried on for about three years, the boys changing from unjoined print-script to a cursive style in Standard V, three years before leaving school, it is a long time before they can catch up to their initial print-script record ; and, even at the time of leaving school, can write unjoined print-script faster than cursive-script. Does any one doubt that if the additional three years' practice had been given to the unjoined print that these boys would have been very much more facile in the one style. Even as it was, their print-script record improved, partly due to increased age and nervo-muscular development, no doubt ; but partly to the fact that it was kept in being in written arithmetic and map-drawing, and partly to the speed tests which were given from time to time.

The second experiment reverses the process : it is of theoretical interest, but not of much practical importance ; for schools do not, after teaching a cursive style, go back, as it were, to print-script. But the experiment was necessary for theoretical completeness. Standard IV boys, months after changing to unjoined print, did not catch up to their then position in cursive work ; much less to what their record would have been had they not changed their style. But Standard III had, in a sense, caught up ; they could, at the conclusion of the tests, write print-script more easily than cursive-script. In this, as in the preceding experiment, the earlier style (in this case cursive) had, to some extent, been kept in being.

In the third experiment, carried out in a girls' school, we found that, many months after the change from unjoined print to a cursive style, even after the complete discontinuance of printing (which would help it to die away, as it were), the girls could still write print-script more easily, especially in the highest or Standard VII class, in which, of course, the girls were older and had had a longer period of print-script before beginning a cursive style.

In the fourth experiment, the great importance of the quality of the teacher and the *tempo* of his boys' mechanical work was shown. Boys who had learnt print-script in Standards II and III under the conditions stipulated, did catch up rapidly in cursive work, in fact, in a few months, they surpassed the work they had hitherto done in print-script. But practice in a few speed tests under their new teacher—a man of exceptional power and capacity—in which unjoined print was used as well as cursive-script, brought the two styles much closer together, and it was the opinion of the teacher who marked the papers (and was, I may remark, an opponent of print-script) that, in a very short time, if the comparative speed tests had been continued, the print record would have equalled the cursive in facility. Of course, it would subsequently decline, but the point of interest lies in the fact that the *tempo* of their mechanical work, imposed upon the boys by their new teacher, had quickened and revivified the print-script, even though he had not taught this form of writing. The rapid advance of " cursive " on " script " was therefore adventitious as far as the competing styles were concerned. It was the man, not the style.

In the fifth experiment, carried out in a poor girls' school, a change was made from unjoined to joined-up print. Again very considerable dislocation and delay took place, but the lower standard showed a more rapid re-adjustment than the higher.

In the sixth experiment, also in a girls' school, but with abler children, it was found that, after two years (it might have been earlier, but we had set no tests before) a change from unjoined to joined print had produced such a reversal of capacity that, at that time, the girls were much more facile in joined-up than in unjoined print.

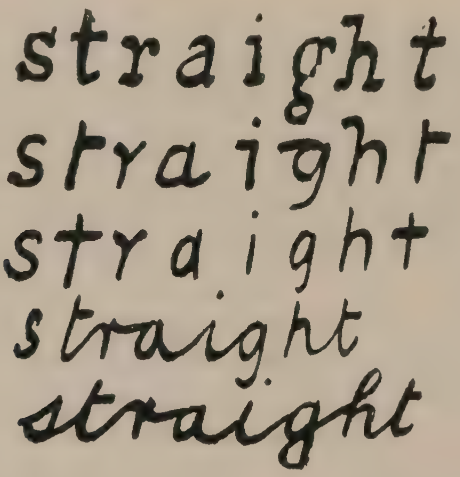
We found, I have said, that, in the first experiment, the *boys* had not caught up in three years after they had changed from unjoined print to an ordinary cursive style. Does this mean that it is easier to change from unjoined print to joined-up print rather than to a cursive style? I do not know ; we have perhaps a sex difference, though we have no racial difference, and I am disposed to equate the teachers. I incline to the opinion that it may, but I cannot justify the opinion.

If we *must* make a change, when shall we make it? Not only have we found that the children of the older and higher standards, who write faster than the lower and younger ones, show a smaller power of re-adjustment, but we have also found that the more facile writers within the same standard show a smaller percentage of re-adjustment than the less facile. This means that we should make the change early, as early as we possibly can, when the initial style is less set and automatic than it afterwards becomes. But why make a change at all? Why not begin as one means to go on? Did writing stand by itself, I should have no hesitation in answering, " Yes, let us make no change ; let us begin as we mean to go on." But, in its very early stages, writing is bound up with learning to read and to spell. It is undesirable on theoretical grounds (and I think some experimental work of mine gives indications that it is undesirable on a posteriori grounds also) to use two forms of print at the outset. Let us then use the print of the reading book at first for both reading and writing —it may be real print, or phonoscript, or other print modified for purposes of reading. Then, when the mechanical difficulties of early reading have been mastered, say at approximately the age of seven years (the age will differ in schools of different social class), let us begin with the writing with which we mean to go on, joined-up printing or cursive-script, as the case may be. It is surely undesirable in the middle of the child's school life, or later, to cause dislocation and delay by a change of style in writing at an age when writing, and fast writing, is so valuable in connection with the other subjects of school instruction.

APPENDIX TO PART II.

Perhaps a word or two of practical direction may be pardoned, if the above conclusions are well-based. The suggestion is that, when writing, in either of the above forms (print-script or cursive-script) is begun, and is taught by a synthetic method (i.e., one in which letters or parts of letters, not whole words, are taught first) as is almost invariably the case in actual practice (whatever books of theory may say) the teacher shall look ahead, and form those letters which, later on, it is intended to join up, with appropriate serifs which will facilitate that joining : letters which will never be joined will need no serifs.

Prior to the writing stage is the reading and printing stage, in which that form of printing should be read and written which is used for the teaching of reading. Specimen prints and writings follow. (The serifs in real print, as they are not required for indentification, and will never be used for writing, later on, need not be taught).



(real print).
(phonoscript).
(unjoined print-script).
(joined-up print-script).
(cursive-script).

END OF PART II*

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*The question of the relative facility of unjoined print-script and cursive-script with children who have not already learned writing or printing of any kind is reserved for future treatment.

A Statistical Study of Some School Marks.

II.—THE FALLACY OF PERCENTAGES.

BY FRANK SANDON.

IN the great majority of English secondary schools the school organization is still essentially based on class teaching given to forms or divisions of forms. The form divisions are intended for children of about the same age, ability and attainments, and are frequently arranged as the result of some form order involving, perhaps, class marks, periodical test marks, homework marks, term examination marks, etc., in a miscellaneous range of school subjects. For the sake of comparability, the teachers in charge of the several divisions of any form are often instructed to base their term marks on some common standards, with the idea that the pooled totals will be such that equal total marks in whatever division will represent equal scholastic ability. The validity of this procedure seems doubtful. It seems that the arguments of Prof. F. Y. Edgeworth about examinations can be applied to this course. As far back as 1888*, he pointed out some of the errors that arise in marking examination papers. The chief sources of error that he dealt with, giving rise to a difference between the mark actually awarded to any candidate and what is defined in the papers referred to as the " true mark," are :

(1) The least count, *minimum sensibile*, giving rise to a probable error of, say, 5 per cent. per simpler answer.
(2) The personal equation of the examiners :
    (*a*) The variation in particular answers (approximate probable error 10 per cent. per question).
    (*b*) The variation in the whole scale of marking (approximate probable error, 4-5 per cent. per paper).
(3) Correction at great speed (25 per cent. per question),
(4) Fatigue of examiners (1-2 per cent. per paper).
(5) Non-representative character of the answers of the candidate.

In all the error was estimated at 2 per cent. or 3 per cent.

In the case of term totals such as that referred to, it seemed that the considerations about, say, *minimum sensibile*, and personal equation, would also apply.

The question seemed worthy of investigation, and the writer has recently attempted to do this with material to hand. This data related to the term marks given in the four divisions of Form II—the first year form —of a mixed secondary school. These divisions were intended to be formed by random sampling of the entrants to the school. All these children were practically the same physical age, and the randomness of the sampling was practically ensured by an alphabetical classification, the earlier in the alphabet going to Division A, etc., boys and girls being dealt with separately, so that each division consisted of some 12-15 boys

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*See *Journal Royal Statistical Society*, Vol. LI, pp. 599-635 ; Vol. LIII, 1890, pp. 460-475 ; Vol. LXXXVI, 1923, pp. 59-60 ; and *Phil. Mag.*, August, 1890. A summary of these is given as an appendix to P. J. Hartog's "Examinations." (Constable.)

and the same number of girls. The basis of term marks is given in Table I, and on the results of the term's work a redistribution took place, boys who obtained more than 63 per cent. going to IIIA, those under 54 per cent. to IIID, and so on. The corresponding marks for the girls were 60 per cent. and 49 per cent.

The first thing to observe about the methods adopted in the following analysis is that they are all very crude. They deal with small numbers of the order of a dozen or even less, so that the assumptions involved are of doubtful validity from the statistical point of view, and the conclusions can only be regarded as indicative when they exhibit a general consilience. In view of this, refined methods are inappropriate and the three procedures adopted are considered in their simplest possible arithmetical form. The methods were the following:

(1) *Method of Comparative Percentiles.*
(2) *Method of Relation between Drawing* (*e.g.*) *and General School Ability.*
(3) *Method of Next Term's Results.*

In each case the illustrations are taken from the case of the 12 boys in IIA and the 16 boys in IIB.

METHOD I.

METHOD OF COMPARATIVE PERCENTILES.

If both divisions are random samples of the same "population" the frequency distribution of actual ability should be the same. One way of testing this is to use Galton's method of percentiles—a boy 20 per cent. down in the ranking of one division should be of the same merit as one 20 per cent. down in the other division, and ought, therefore, to get the same mark. Actually what was found was:

Percentile		12½	25	37½	50	62½	75	87½
Marks obtained by boy of this rank in:	IIA	505	459	433	421	413	400	367
	IIB	444	431	420	405	387	354	314

(Percentiles 25 and 75 are called the quartiles; 50 is the median.)

METHOD II.

METHOD OF RELATION BETWEEN DRAWING AND GENERAL SCHOOL ABILITY.

Some subjects (viz., drawing for boys and girls, woodwork for the boys, cookery and needlework for the girls) were taken throughout the four divisions by the same subject teacher. On examination of the marks, we note that the boys who get the higher drawing mark in any division get on the whole the higher form marks; in other words, there is a correlation (actually of order up to .5) between ability in drawing and general school ability, as measured by the term form mark. This correlation is not, in general, appreciable in the case of, e.g., woodwork and general form marks. Since the higher the drawing mark the more the general ability we can predict (to some extent) the term mark from the drawing mark, and the term mark obtained by boys in different divisions getting any particular drawing mark should be the same. Again, then, we can compare the basis of marking in the two forms.

Drawing Mark		35–44	30–34	23–29	Below 23
Average Form Mark of boy obtaining such drawing mark in :	IIA	457	448	420	275
	IIB	440	409	384	301

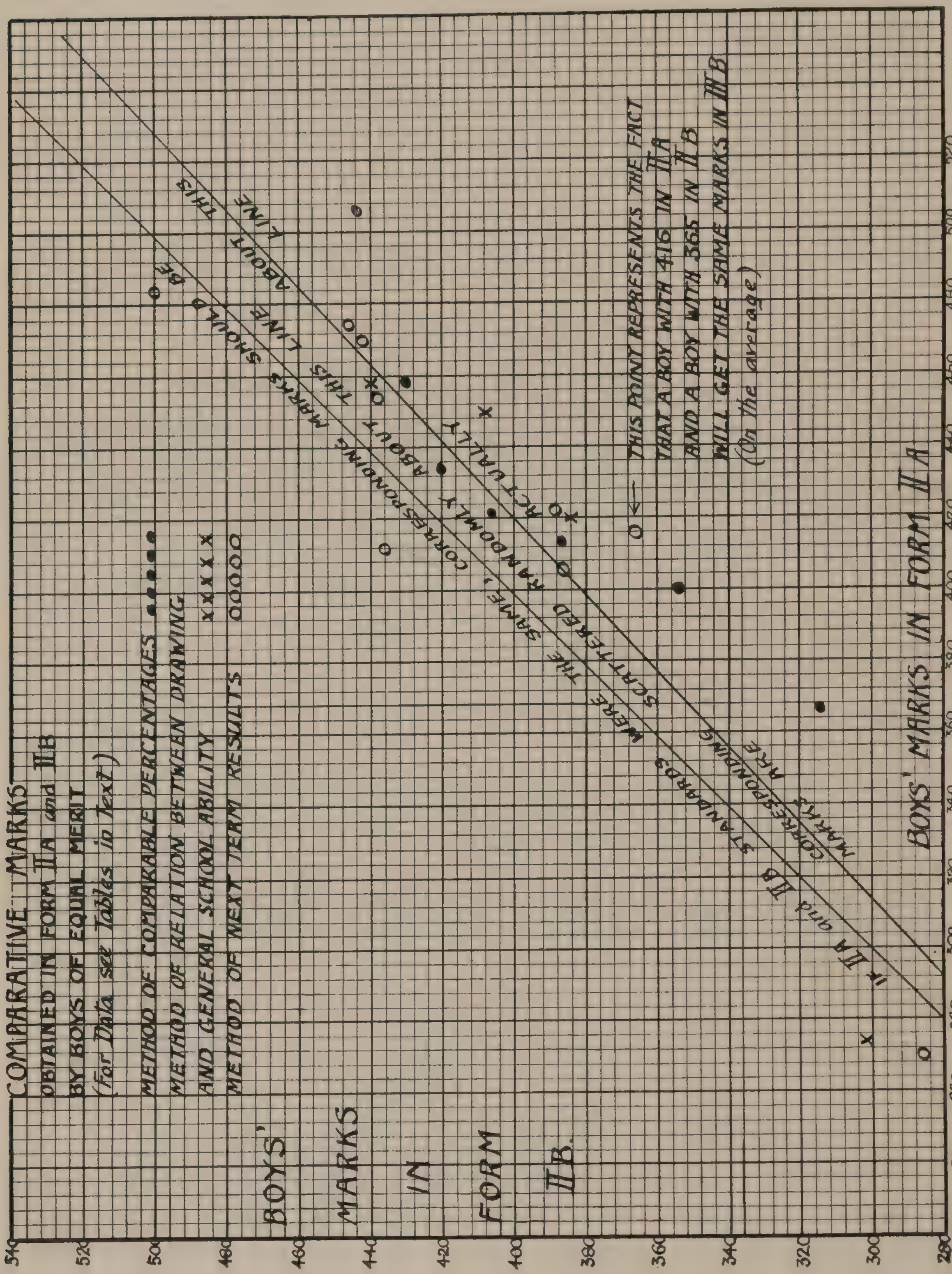
Method III.

Method of Next Term Results.

As already pointed out, the divisions were re-shuffled on the basis of the term marks awarded, so that the new IIIA consisted, so far as boys were concerned, of six from IIA, four from IIB, two from IIC, and three from IID. At the end of a further half-year, these 15 were arranged among themselves in a IIIA order. Now during the year in any one division there is found to be a high degree of agreement in the term marks obtained. Put in statistical language, the product-moment of coefficient of correlation is of the order .85. Considerations, such as the more rapid development of the younger boys, minor changes in the subject matter dealt with requiring somewhat different abilities from the individual boys, etc., prevent perfect relationship, but with a correlation as high as this we can safely use the results of one term to predict fairly closely what those of the next term would be. This involves the assumption that if two boys were bracketed equal at one time, we are not far from the truth in assuming that they would be approximately equal six months later. This is probably true even if in the meantime the boys have been moved to a new form and have a new teacher. If, then, two boys who prove to be equal in Form IIIA were in different divisions of Form II six months earlier and got marks, the one in IIA of 420 and the one in IIB of 470, the difference of 50 marks is more probably due to a difference in the standards of marking in the two divisions of the second form than to any real difference in worth. We look, then, to find a group of boys who were together in the same division of Form II, and also together in Form III. We have, for example, a group of six who were all in IIA, and then all in IIIA. This enables us to get a mark in IIA corresponding to any IIIA mark. If another boy who went to IIIA came from IIB we can estimate the mark he would have had in IIA, had he been there, from the relationship that we have discovered between

IIA and IIIA marks. This gives us, therefore, a third method of comparing the marks obtained in IIA and IIB. Thus, for one boy, we find :

(1) Actual mark in IIB	500
(2) Actual mark in IIIA	439
(3) On the basis of the relationship between the IIA and IIIA marks, it is found that the probable mark in IIA is	484



"Predicting backwards" in this way* we have the following table :

Case.†	1	2	3	4	5	6	7	8	9
Mark in IIA	484	474	470	453	421	416	412	407	275
Mark in IIB	500	445	443	438	388	365	436	387	285

† Cases 1-4 from IIIA marks of ex IIB boys and IIA-IIIA relationship ; 5-8 from IIIB (ex-IIA) and IIB-IIIB ; 9 from IIID (ex-IIA) and IIB-IIID.

Further values could be obtained by comparing IIC, say, with IIA and with IIB in turn, thus getting indirectly the equivalence again of IIA and IIB marks. In our case the sampling errors arising from each comparison due to the smallness of the population considered make the results so little valid that it is not worth while considering them here.

DISCUSSION AND CONCLUSIONS.

If, then, we consider these three methods together we find that there is a fair general agreement that the IIA mark is higher than that obtained by a boy of equal merit in IIB. This is readily exhibited by plotting the corresponding points, when we see that there is an excess (of some 20 or 30 marks‡) fairly consistently shown. As the various methods show this consilience, it seems plausible to consider that there is a real difference. It corresponds to a percentage difference of some 3 or 4. In the case of the girls of IIA and IIB (*see* Table at the end), we conclude that there is a real excess and possibly a difference of some 60 marks,‡ or, say, 9 per cent.

Limiting ourselves to a comparison between the boys of IIA and those of IIB (the method can, of course, be applied to compare the other divisions, but for our present discussion we shall confine ourselves to these two divisions) we conclude that, although there were very detailed instructions about the method of obtaining the marks from the separate subject marks, themselves the subject of an agreed basis, there is a real difference of some 3 per cent. or 4 per cent. in the term marks of these two divisions.

(1) This difference can be regarded as confirming the work of Edgeworth and others on the marking of examination papers, the detailed instructions in our case for forming the totals being equivalent to the detailed specification of the basis of marking the scripts.

(2) This difference may be taken, in the case used for illustrating the method, as an example of Thorndike's theory of the "halo" effect, extra marks being given to the A division because they are the A division and commonly regarded as the senior one.

(3) When we consider that the whole range of marks in all the term totals is only from, say, 45 per cent. to 75 per cent., and that Form IIIB was recruited from boys getting between 60 per cent. and 64 per cent., and IIIC from those with between 54 per cent. and 60 per cent., it is clear that the difference that we have found is very considerable, and may result in very considerable injustice being done.

(4) Since errors of this magnitude arise, even when no æsthetic judgment is obviously concerned (they might be still greater if this factor

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*Actually the method used was to equate quartiles of the various frequencies of six, or so, by the string nomogram method of the writer's earlier papers.

‡The difference is not the same throughout the whole range of marks.

were important), it is desirable that an easily marked test, highly correlated with the general run of school marks (e.g., a group intelligence test) should be set to all the divisions of a form for the purpose of checking (on the lines of method 2 or 3) the intercomparability of the marks of the different divisions.

(5) The discrepancy between the standards of the two divisions is probably different for boys and girls, although the basis of marking was only known to differ in the case of the practical subjects (woodwork, cookery, needlework). The boys of IIA have, roughly, a 4 per cent. excess, the girls have one of 9 per cent. This may be due to unconscious prejudices of the assistant masters and mistresses of the staff. No other explanation appears suitable. The almost instinctive adoption of separate consideration for boys and for girls due to following the biometrician's rule of always allowing, as far as possible, for possible differences due to such influences, even where they are not definitely known to be present, is once again justified.

SUMMARY.

(1) Three different methods are suggested for testing the validity of the percentage method of comparing the marks of different divisions of a form.

(2) In the case considered, general agreement is found in the results of the different methods. Boys of the A division receive more than those of equal merit in the B division.

(3) The conclusion is submitted that it is impossible to guarantee that the same standard should be adopted in the different divisions of any one form.

(4) A method is suggested for comparing the basis of rating the marks of different divisions of a form.

(5) Boys and girls in any one division of a form may not be marked on the same basis in reality even if this be attempted.

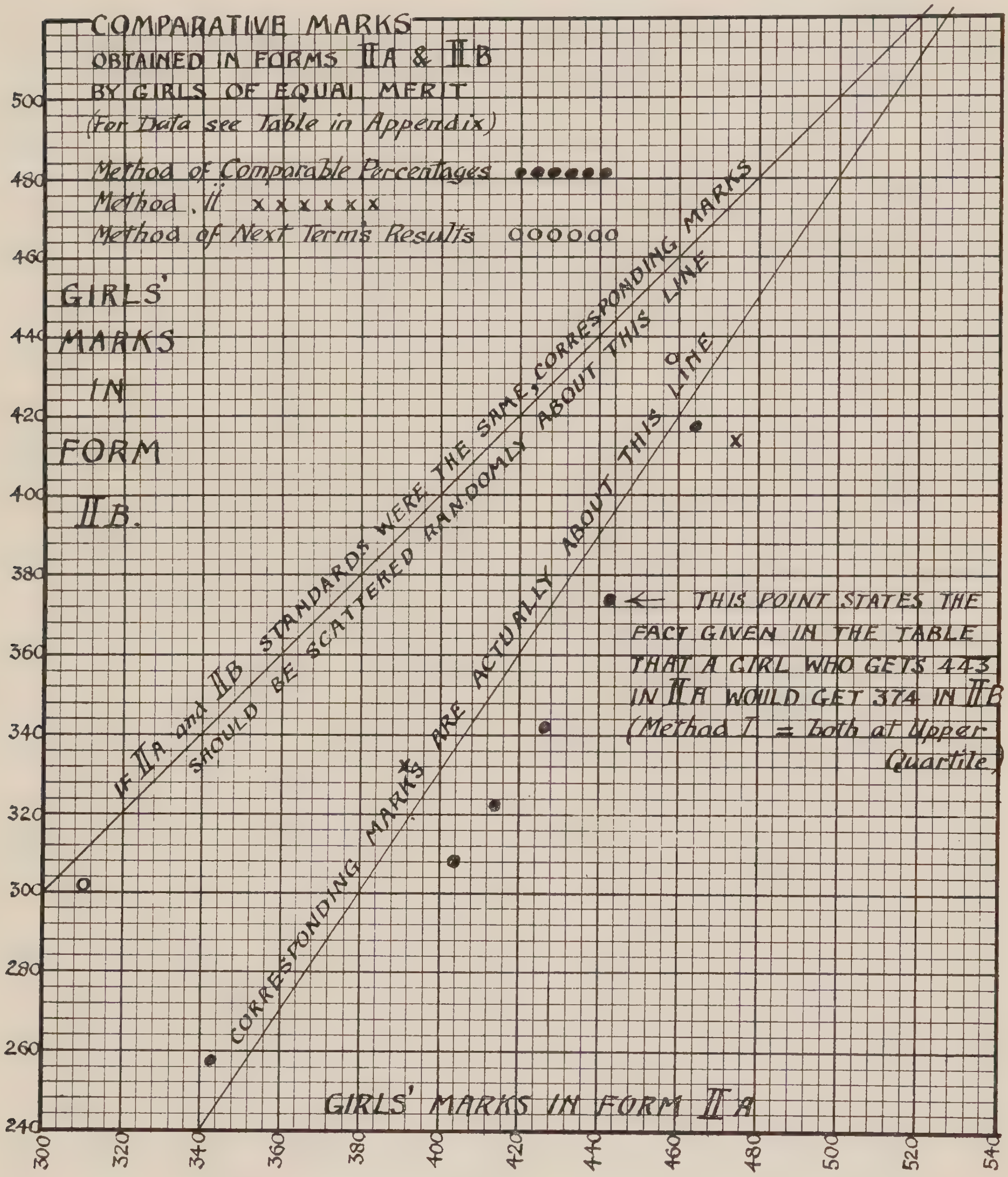
TABLE I.

Basis of Calculation for Total Term Percentage.

English Composition		40
English Literature		60
Reading and Recitation		50
Writing		20
Dictation		20
Geography		50
History		50
French		50
Arithmetic		50
Algebra		50
Geometry		50
Science		50
Drawing		50
Scripture		50
Boys :	Woodwork	30
Girls :	Cookery	30
	Needlework	30
TOTAL :	Boys	670
	Girls	700

Relative Marks of Girls in IIa and IIb.

	Method I. (IIA, 13 girls. IIB, 11 girls.)							Method II (Cookery.)		Method III	
IIA	464	443	427	414	404	382	343	474	391	459	312
IIB	417	374	341	323	308	287	257	415	332	435	303



Life, Mind, and Spirit.

By C. Lloyd Morgan. Gifford Lectures, 1923. (Williams and Norgate, 1926. Pp. xix+316. 15s. net.)

THIS volume is the welcome supplement to Professor Lloyd Morgan's first course of Gifford Lectures on "Emergent Evolution." Its province is the broader treatment of certain fundamental philosophical positions which had been briefly sketched in the earlier work. The two books are parts of a single design in which are exposed the main lines of the author's reading of the world.

And an extraordinarily interesting reading it is. Like much recent philosophical writing it begins with an orientation towards the concept of evolution as the clue to the interpretation of the natural world. For what it purports to be, i.e., as the record of the temporal unfolding of natural events, the evolutionary story must be taken to be valid: and any tenable metaphysic must be consistent with this naturalistic scheme. Scientific naturalism may not give the whole truth. But what it gives, so far as it goes, is true, and must be respected as such. From this point of view, then, the world, including human life, which falls within it, reveals itself in time as a series of levels or stages of being. Initially we may conceive it to have existed in a state describable as matter-in-motion—the stage of merely physical events. Supervenient upon that is the stage at which these physical events have organized themselves in new complexes; and these complexes disclose themselves to be the bearers of qualities unknown in and (so far as we can see) unpredictable from the qualities borne by merely physical events. Such chemically "qualitied" events are in turn the constituent stuff of still more complex systems bearing the quality of life. No explanation can be given of the appearance of these new qualities at the successive levels of complexity. They are genuine "emergents," in regard to which our attitude can be only simple recognition and acceptance "with natural piety."

So far, perhaps, the doctrine may be said to be "common form," though the wealth of illustration with which Professor Lloyd Morgan clothes it is anything but common. But the peculiar interest of his theory lies in his contention that this is only half the story. One's impulse no doubt, having traced the emergence of qualities thus far, is to go on and complete the hierarchy in the fashion proposed, e.g., by Professor Alexander. For him vital events give rise to mental events, and mind is (so far) the last "emergent" of matter. That, however, is precisely what Professor Lloyd Morgan is concerned to deny. Mind as such is not an emergent. On the contrary it is, equally with matter and co-existently with it, a primary and fundamental differentiation of the ultimate reality which underlies both. Mind and matter, or better, mind and life, the system of mental events and the system of physical and physiological events, are, in Spinoza's phrase, attributes of one substance: and there is no direct relation between them other than that of "unrestricted concomitance." Each series runs its course independently of the other, though in exact concomitance: both alike "manifestations of Divine purpose, one and indivisible in God as ultimate substance." There is, of course, a sense in which *our* minds are emergent. They appear at a particular point in the evolutionary story, in correlation with physical arrangements of the appropriate degree of complexity. But they emerge within the attribute mind, and *every* integral entity of physical events, from the simplest to the most complex, has *its* due mental concomitant.

Here then is a sufficiently arresting break—all the more arresting because evolution seems only to aggravate the familiar difficulties with which theories of this type have been beset. On the face of it, a theory which takes seriously the evolutionary development of the natural world is committed by the hypothesis of natural selection to making full use of the interplay of organism and environment. And in human life at least, not to speak of lower forms, the organism *is* a conscious self: and its record cannot be written in purely physical terms. If then physical and mental events run their course in complete independence of one another, does not evolutionary theory require an adjustment between them so continuously intimate as even to strain the explanatory powers of a doctrine of pre-established harmony?

This, plainly, is the crucial matter for Professor Lloyd Morgan's theory, and it is not surprising that it occupies the greater part of his book. He abates nothing of the sharpness of the difficulty. Nothing could be clearer than his rejection of every form of stating the relation between mind and body (to use the shorter phrase), whether "behaviorist" or "animistic," which would compromise the independence of either. Yet he admits, and indeed emphasizes the "guidance" of bodily act by mental process. And "guidance" describes something effective. It is quite true that animals "learn" to regulate their behaviour, and that men can determine their doings by reference to consciously fabricated fore-plans. The mental series seems to make a difference to the course of the physical series; the latter would certainly run differently if the former were absent. How then exactly are we to interpret this fact of "guidance"? Can we make a rendering of it consistent with the dualist scheme?

The argument takes a wide sweep, and is worked out with remarkable skill and subtlety. Its structure is briefly this: (1) an analysis of perception, chiefly of visual perception, on the lines indicated by the doctrine of "projicience" in "Emergent Evolution"; (2) the elaboration of the concept of "reference" as a fundamental character of mental events; (3) the distinction of three phases of "reference," reflective (belonging only to mature human intelligence), cognitive (recognizable in the higher animals and in human infants) and non-cognitive (the primary level, exemplified in the first acts of mind, in simple awarenesses in which there is no enlargement of outlook beyond the narrow span of the present); and (4) the tracing of the correlation with each of these phases of progressively elaborate ways of response on the part of the "minded" organism to its environment, so that at each higher stage it copes with more of the world, and copes with it more efficiently. In this correlation is the secret of "guidance."

Every part of the argument contains material of the greatest interest and importance. On points of detail indeed, it would be easy to find grounds of criticism. It is, e.g., doubtful how far Professor Lloyd Morgan is right in his view that Professor Nunn's "hormic" theory involves an animistic conception of the relation of mind and body. But there can be no question of the high value of much of the discussion. Almost incidentally, as it goes along, it throws light on some of the dark places of contemporary epistemology. One might well extract from it a theory of the nature of sense-data which would relieve us of some perplexities. Nevertheless on the central enigma one's final impression is that the argument is not solidly convincing. Professor Lloyd Morgan relies much on his insistence that both mental and physical events fall within and belong to the substantial unity of the life of the organism. But it is hard to see that this amounts to more than a restatement of the problem: and it does not serve to make fully explicit the process whereby or wherein cognitive "reference" gets itself translated into direction of physical "influence." It is hard to state the very notion of guidance in terms that are compatible with a strict concomitance theory; and it is possible that the notion itself helps to bridge (or to conceal) a hiatus in the argument by carrying more operative weight than it can fairly be made to do.

However that may be, it seems to be clear that the straightforward evolutionary view which this theory seeks to displace could claim an advantage over it on the score of "economy," and that score, as Professor Lloyd Morgan himself maintains, is entirely relevant so long as the argument is within the field of scientific naturalism. The final justification of the concomitance theory must therefore be sought outside that field. And perhaps the culminating interest of the whole book, marked as it is by a loyal acceptance of the standpoint of naturalism, is the indication that is here given of the author's recognition of the limits of that attitude. It may be that Professor Lloyd Morgan has been driven to his Spinozistic view by his perception of its greater consistency with the theistic "acknowledgment" with which he thinks it necessary to supplement scientific naturalism. A theory of evolutionary emergence in two attributes at least establishes that the reality of mind, even in the time order, is in no way dependent upon that of matter.

The grounds of this theistic position are not set forth in detail: nor is there much discussion of its implications. In the main, Professor Lloyd Morgan is content to say that while for its business of the detailed treatment of natural events, science must take them as a going concern, and is bound to eliminate all such extrinsic notions as that of an intervenient "activity," yet any final reckoning with the system of things as a whole will find that it cannot so easily dispense with the conception of a supreme activity as the foundation of the natural scheme. It is true that this hypothesis or postulate is not capable of formal philosophical proof. But neither is it capable of disproof. And in that respect it is in the same position as the hypothesis of the existence of a physical world which is independent of our knowing of it. Just as that belief is reached as the lower limit of our analysis of our experience, so the belief in a supreme Activity or a Divine Purpose appears as its completion at the upper limit. Strong reinforcement can be found for it in the analysis of our ethical and æsthetic experience. But in the end it remains an "acknowledgment," which we make only if, without it, we judge our rendering of the world to fail to attain the standing of a self-subsistent unity.

These volumes no doubt leave us with many questions—not least with the question whether theism can come to terms with evolutionary naturalism on any other basis than that which Professor Lloyd Morgan essays. But these are not now to be discussed. It remains to be said—

though it hardly needs saying—that in these lectures Professor Lloyd Morgan has produced a work not only of rich and varied scientific learning and of great philosophical insight and penetration, but of singular sweetness and grace of temper, and in a literary form of pleasing simplicity and distinction.

H. J. W. HETHERINGTON.

Teaching Dull and Retarded Children.

By Annie Dolman Inskeep, Ph.D. (New York : The Macmillan Company 1926. 8d. 6d. net.)

DR. Inskeep's book will be welcomed by the practical teacher. In this country it has been estimated that the proportion of dull and retarded children amounts to more than 10 per cent. of the total school population. Dr. Inskeep would even assess them as amounting to over 20 per cent. How are we to deal with them ? No longer is each pupil expected to keep pace with the standards assigned by some official code. In principle, if not in practice, every teacher realizes that instruction must be fitted to the needs of the individual child. On the title-page of her volume Dr. Inskeep is described as a " specialist in the teaching of atypical children"; and her chapters are full of useful and concrete suggestions towards this end.

The underlying conception of all that she writes is formulated in a single phrase : it is the adaptation to retarded children of " natural teaching methods." These methods she reduces to four main heads : drill, games, the " project procedure," and " appreciation-studies." To studies in appreciation she devotes a special chapter ; and to games for the backward child she devotes two. Everywhere the importance of a concrete manual approach is recognized ; and the longest chapter in the book is devoted to the education of the hand. Education through the eye, however, is touched upon but lightly. To the value of the film and the lantern-slide, of the picture, the model and the diagram, there are only a few brief references.

The social needs of the backward child are amply emphasized. An inter-related study-programme is suggested for history and geography; and both health and thrift are to be specifically taught to him. The greater part of the book, however, is concerned with the teaching of the ordinary topics of the elementary curriculum—reading, spelling, arithmetic, handwriting, and oral and written composition. The various pages are full of ingenious " devices and suggestions " for dealing with what are usually supposed to be the fundamental subjects.

The volume as a whole modestly professes to be no more than a practical handbook. Here lies its peculiar appeal to the working teacher. But here also lie its chief dangers and its chief defects. It is a maxim with the modern physician that, instead of going direct to the application of " devices and suggestions " for the cure of disease, he should begin by studying each patient as a unique individual, not hastily attacking symptoms, but searching first of all for their causes. So, too, in the best teaching practice of to-day. Instead of blindly turning on more drill, more games, more "devices and suggestions," the intelligent teacher begins by making an individual study of each backward child, endeavouring to analyse out the causes that are at work. This line of approach Dr. Inskeep almost wholly ignores. Never does she tell the teacher how to discover whether the child's backwardness is innate and incurable, or whether it is merely accidental and springs from some removable source. Never does she indicate how the teacher can find out which children are backward and which are not, or how the origin of their backwardness may be investigated.

Only in one instance does she suggest that the teacher should ask why the child has not been able to learn the particular subject in which he has fallen behind; and in this one instance—namely, reading—her list of possible causes omits nearly all that are commonest and most important. Except for a few slight references to imagery, the causes of backwardness in arithmetic or in spelling are hardly touched upon.

Her description of the five main "characteristics of the mentally deficient child" may be misleading; for she herself adds later (though perhaps not altogether accurately) that all dull children also exhibit in varying degrees one or more of the characteristics specified. How then are the defective to be distinguished from the dull? And how are the dull and defective to be distinguished from those who are merely backward? It is singular that the adoption of mental tests for such purposes is scarcely mentioned.

But it is perhaps ungenerous to cavil at the writer for not doing what she has never set out to do. After all, on the use of psychological tests in studying the backward child and on the causes of special disabilities in reading, spelling, and arithmetic, there is, in America at any rate, already a sufficient number of excellent text-books. These in their turn were apt to omit "devices and suggestions" that could be directly applied in practical teaching. As a supplement to such works Dr. Inskeep's volume will be most valuable; it would be a mistake if it were accepted as a substitute.

C. Burt.

Book Reviews.

The Psychology of Time : by Mary Sturt, M.A. (The International Library of Psychology and Philosophy and Scientific Method. Kegan Paul. Pp. vi+150. 7s. 6d.)

Miss Sturt's volume on "The Psychology of Time" constitutes a highly suggestive study of the concept of time as we experience it in daily life. Miss Sturt regards this as likely to be the most fruitful line of approach to a problem admittedly of great difficulty. In taking this view-point the writer is adopting rather the modern scientific attitude than the more philosophical approach of earlier psychologists. At the same time Miss Sturt tries to avoid misconceptions, due to experimentation under laboratory conditions, which are so simplified, that the results bear no clear relationship to the everyday conditions of our ordinary activities.

Accepting the evolutionary theory of the development of mental phenomena, Miss Sturt first endeavours to gain some idea as to which elements in our concept of time form part of the consciousness of the lower and higher animals. She then proceeds, making use of the published records of ethnologists, to study the evidences that are available, of the development of ideas of time in the social life of primitive and of more civilized peoples.

There follow three chapters, which describe a series of original and ingenious experiments, carried out by Miss Sturt, in the course of investigating the nature of the concept of time in the growing child and in the modern adult. In studying the experimental results thus obtained, the writer reaches a number of conclusions, which contribute towards her final position, that "time is a concept, and that this concept is constructed by each individual under the influence of the society in which he lives."

The experimental record of the book forms the most interesting and suggestive part of Miss Sturt's study. It deals with three problems : (1) That of the development of the time concept in the individual in the childish years ; (2) That of the nature of the concept of duration of time in the adult ; (3) That of the nature of the experience of sequence of events in time in the adult. All three studies bear witness to Miss Sturt's originality and resourcefulness as an experimental psychologist. Of the three, that dealing with the development of ideas of time during the childish years is of most interest educationally.

By means of ingenious questionnaire tests, absurdities tests, pictorial and story tests, Miss Sturt has achieved some considerable success in that most difficult operation, the measuring of mental content in children. Her experiments further enable her to point out an interesting parallel between the development of time-ideas in the early stages of civilization and in young children.

In her attempt to avoid the artificial environment of the laboratory, the experimenter has, perhaps, undervalued the essential necessity for exact control of experimental conditions in scientific work, and, moreover, has dealt with groups of children which are disappointingly small. Consequently, the reader feels that Miss Sturt's conclusions are founded on a scientific basis that is somewhat too slight to bear them. In regard to variety of experimental conditions, for instance, some of the tests were given to four to ten-year-olds, some to eight to fourteen-year-olds, some to twelve to fourteen-year-olds. Yet the results are reviewed together in drawing conclusions in regard to the stages of development of ideas of time throughout the school years, and this in spite of the fact that several of the test results point to ten to eleven as the crucial years in the development of the concept of time. Again, in some cases Miss Sturt defines the different types of schools in which the tests were given, sometimes she omits this very relevant information. The impression is left that this factor changes from test to test. Further, the experimenter makes no attempt to eliminate the varying factor of specific knowledge of historical facts, due to recent teaching or mechanical drilling in school class-work.

Nevertheless, Miss Sturt has opened up a fascinating field of research in a most suggestive manner. All school teachers of history would do well to study Miss Sturt's conclusions carefully, especially in regard to the stages of development in the childish understanding of epochs, centuries, and exact dates, to test the validity of the conclusions among their own pupils, and to consider the modifications in method, suggested by this new contribution to our knowledge of the psychology of children.

J. G. MacG.

The Mental Growth of the Pre-School Child : by Professor Arnold Gesell, Director of the Yale University Psycho-clinic. (The MacMillan Company, New York. Pp. x+447. 15s. net.)

Not the least of the services Stanley Hall did to child study was to set a good example in procedure by concentrating attention on one particular period of pre-mature life and marshalling all the available knowledge concerning it. Child study has undergone a profound change since enthusiastic followers of Hall a bare quarter century ago took all childhood for their province and tried with the crudest of statistical instruments to measure any and every aspect of child behaviour, regardless of the difficulty of the problems or of their own fitness to deal with them. The new child students are more sober-minded persons with a sounder scientific equipment and in closer touch with reality, and most of them would probably fight shy of attempting to survey so complex a period as adolescence. But they also have realized the virtue of studying a particular time of life, and gradually a new science of the child is being reared on the foundations of an exact study of the pre-school child. The present volume is a notable contribution to this foundational work. Professor Gesell is a disciple of Binet rather than of Stanley Hall. He has Binet's behaviourist way of approach to his subject, and his most important results are norms of development in infancy and early childhood which have obviously had their origin in Binet's work. Over 500 normal children were studied with minute care under the conditions of both home and clinic, at least 50 representative children being taken for the purpose at 4, 6, 9, 12, 24, 36, 48, and 60 months. The results were afterwards codified in a set of " developmental schedules," containing in all 150 normative items, which are set forth at full length with an abundance of concrete detail under the headings of motor development, language development, adaptive behaviour, and personal-social behaviour, and form the core of the present study. Following on this and supplementing it is a study of what Professor Gesell calls comparative cross-sections of development. These consist of notes made on the behaviour of typical children of successive ages (four months and six months, six months and nine months, and so on up the scale) when two of them are allowed to do similar things simultaneously under laboratory conditions. True to the strictly practical purpose of the investigation as a means to the improvement of clinical procedure, the book concludes with a helpful discussion of methods from the point of view of the practitioner in such a clinic as that over which Professor Gesell presides. It is all much sounder in a scientific way than the old child study, but one cannot help wondering whether Professor Gesell and his behaviourist friends would not be the better for a little of the imagination which ran riot in the earlier phase of the study. The criticism sometimes passed on work of this sort is that it takes the child under highly artificial conditions and assumes his expression of himself to be capable of being judged by the responses he makes. There is some truth in this, but the more serious objection to studying children as one studies " rats and mice and such small deer " is that there is a good deal in the child which eludes the kind of measurement attempted—the child's speech, for example—and which yet must be taken into account, whether measurable or not, for the understanding of the later stages of development.

W. B.

Sex and the Young : by Marie Stopes, D.Sc., Ph.D. (The Gill Publishing Co. Pp. 190. 6s. 6d.)

In this book, albeit a short one, Dr. Stopes takes a wide survey of the subject of sex and the young. She deals not only with the instruction of the young in matters of sex, but with such problems as co-education ; the staffing of schools with unmarried persons of the same sex ; the school library ; sex and religion. In dealing with sex instruction, she takes, as it seems to me, very sane views, deprecating much in the way of separate discussion of sex apart from other functions of the human body. She raises an interesting point when she boldly denies the usually accepted view that athletics help to lessen the intensity of sex impulse in the adolescent, and asserts that it is brain work rather than athletics which can do this. She over-estimates, I think, the significance of training in the first two years of life on subsequent development of " will-power," and there are other lapses into psychological fallacies. One curious mistake should be corrected in any further editions. The name of the French psychologist, Binet, is several times spelt " Biney."

The work, as a whole, is very stimulating to thought even when one cannot agree fully with the author. A complete judgment upon it needs to take into account the companion book " The Human Body and its Functions." C. W. V.

Human Nature and Education : by A. S. Woodburne. (Milford, 1926. Pp. 292)

The task which the author of " Human Nature and Education " set before himself was a very difficult one, that of reconsidering old educational problems in the light of modern psychological developments. Success in such a gigantic undertaking could only have been achieved by someone who possessed an extensive and thorough knowledge of modern psychology and yet was willing to employ, skilfully but ruthlessly, well-defined principles of selection. Mr. Woodburne certainly has a wide knowledge of moden psychological developments, but he does not appear to have employed any adequate selective principles in dealing with his material. Consequently his book appears to be patchy. Parts of it are valuable—his chapters on "Intelligence" (Chap. 3), and " The Old Examination versus the New " (Chap. 14), are real contributions to the topics with which they deal—but the book as a whole lacks unity. The different parts do not seem to hang together.

In the early part of the book the author appears to adopt a thorough-going behaviourist point of view. He affirms that psychologists " must really depend on the biologists for scientifically justifiable conclusions " ; and he criticizes a writer like McDougall for introducing " too much psychical matter " into his treatment of instinct. Yet when he himself comes to discuss *feeling* or *imagination* he seems to have entirely forgotten his earlier behaviouristic leanings.

Mr. Woodburne's attitude to psycho-analysis is similar. When he is explicitly concerned with it (Chap. 15) he appears to recognize the value of work in this field. But when he is dealing with *forgetting* (Chap. 8) or *dreams* (Chap. 11) his views appear to be unmodified by psycho-analytic discoveries. " Disuse," he says, " is the fundamental cause of forgetting." " Remembering and forgetting are the positive and negative aspects of the same process." One might almost imagine that he had never heard of *repression.* It is perhaps nearer the truth to suppose that the newer point of view is only present in the author's mind when he is explicitly considering it.

Perhaps the most valuable general contribution which the author has made in the direction of working out a consistent educational psychology is to be found in his constant emphasis on the *social* factors in development. Much of his practical advice to teachers is also helpful and sound, although it does not seem to issue from well-defined philosophical and educational principles.

O. A. W.

Psychology : by Everitt Dean Martin. (Pp. 380. 7s. 6d. Jonathan Cape, Ltd.)

An American book written in English is as welcome as it is rare. But the excellence of this book is not confined to its style. It consists of lectures at Cooper Union, New York, which were part of the regular work of the People's Institute ; this fact, and the sub-title, " What it has to teach you about yourself and the world you live in," suggest a popular, even superficial, treatment of psychology. Yet the lectures, though admirably clear, must have required a very attentive and intelligent audience. It is hardly a book for beginners, but rather for students who have had some preliminary course in the subject. (Thus it might serve as a good text-book for a University Tutorial Class which had grown out of a Preparatory Class.) " There is an apparent need of a book " (says the author in the preface) " which will state simply and clearly the aims and methods of this developing science, show what psychology is and is not, give the reader a better knowledge of the problems concerning which there is a difference of opinion among psychologists, and finally lead the student to a somewhat clearer insight into the meanings of certain forms of individual and social behaviour." The book is indeed an introduction to social rather than general psychology.

Mr. Martin takes an independent line in dealing with various theories. Thus he gives an admirable criticism of McDougall's theory of instinct ; and his attitude towards behaviourism, though not hostile, is thoroughly sensible.

The book is full of shrewd passages : the following may be quoted as one example. " It is coming to be the fashion to try to secure character by removing temptation. If a cinematograph film suggests to the neurotic individual an erotic impulse or the idea of committing a crime, we must have a solemn censorship over all such public entertainments. If a work of fiction or even a literary classic disturbs a moron, we have a ' banned ' book. If a neurotic cannot pass a public-house without going in and becoming intoxicated, cultivated people may no longer serve wine at their dinner tables. From the standpoint of social psychology, this is a wrong-headed method of procedure. It simply forces upon all people the moral dilemmas of the most inferior. A community, like an individual, is known by the dilemmas it keeps. The removal of temptations does not develop character. It simply represents the survival values of lower types of men." F. A. C.

Complacency : the Foundation of Human Behaviour : by R. B. Raup, Ph.D. (Macmillan. Pp. 201. 8s. 6d.)

This is the presentation of what is claimed to be a new way of considering habit. Dr. Raup's theory appears to fit very nicely into the facts. The term " complacency " is applied to those states of equilibrium to which mental experiences tend. The author uses Jenning's view that mental behaviour is finally a physiological fact in support of his own idea that the principle of an equilibrium tendency, obvious in lower organisms, is operative also in human behaviour. The theory is worked up in the course of chapters on the Chemical Basis of Life, the Autonomic Nervous System, and the Central Nervous System, and then it is linked up with the attractive theory of " action patterns " which are the products and, in turn, the further determinants of equilibrium and behaviour. Mental disorders stand over against some derangement of the equilibrium tendency, which explains them and must be regarded as the key for understanding mental adjustment. There is nothing new in a doctrine of equilibrium of mental state, with the tendency to unrest when disturbed or strained and to satisfaction when adjusted. Dr. Raup does, however, strike a novel idea in his theory of habits and uses it in explaining some peculiarities which have not been dealt with satisfactorily hitherto. The book is a useful contribution to the literature of psychology. A. P. B.

The Gang Age : by Paul H. Furfey, Ph.D. (Macmillan. Pp. xii+189. 8s. 6d. net.)

Dr. Furfey identifies this period with that which links up boyhood with adolescence—i.e., roughly between the ages of nine and fourteen years. The main concern of the book is with the normal person and so it bears a special value for those interested in whatever influences a boy's life at the pre-adolescent age ; some reference is made to boys of sub-average mind as well as to others who are intellectually highly gifted. Correlation is claimed between sound physical qualities and healthy mentality. The author discusses the pre-adolescent's plan of life and the influences which shape it ; as one would expect, home, school, and religion figure strongly among these with the definite organization designed to meet the specific tendencies evinced during the " gang " age. The period has its own psychology, which is outlined sufficiently clearly to enable readers to understand why attempts to organize groups of young people are or are not successful, and importance must be attached to the effect of whatever is done at this age upon development in later life. " The Gang Age " is a useful little treatise ; its value is enhanced by an extensive bibliography for those who want to study the subject in greater detail. A. P. B.

How to Calculate Correlations : by Godfrey H. Thomson, D.Sc., Ph.D. (George Harrap and Co., Ltd. Pp. 24. 2s.)

This forms a handy booklet for students who wish to make use of the various means of calculating correlations, more particularly in connection with psychological and educational material. The various methods are set forth with great lucidity and definite examples are given.

The Boy through the Ages : by Dorothy Margaret Stuart. (George G. Harrap and Co. Pp. 288. 7s. 6d. net.)

It is a far cry from the time of the cave man to Tom Brown's schooldays, but making allowance for difference in outlook upon life in different climes and ages, a boy's nature has not varied greatly ; the town boy has been brought up with numerous points of contact in a wide community, the country lad has had his interests, too, to arouse his curiosity, but the outlook of the elders has made great difference in the methods by which youthful aspirations have been satisfied. The authoress has made an interesting story from which the imaginative mind can draw good pictures of the kind of life a boy has led at different periods of history. To help to this end the book contains nearly two hundred illustrations, some of which are well executed in colour, and perhaps not the least valuable are the numerous quotations from contemporary literature.

Those who are interested in the history of methods of teaching will draw pleasure and profit by dipping into this book.

Relation in Art : by Vernon Blake. (Oxford University Press. London : Humphrey Milford. Pp. 320. 15s. 6d. net.)

Only the other day a well-known art-critic on one of our most revered weekly papers was busy putting up a notice " Trespassers will be Prosecuted " on the preserves of art-criticism ; the poacher in the case being an art-historian. Yet the classification of thought by academic terms is but a matter of expediency and we should welcome the appearance from time to time of a thinker who breaks through such water-tight compartments and attempts to envisage life, or some aspect of it, in its entirety. Art, perhaps more than most of man's specialized activities, represents an epitome of life, and lends itself to such general treatment.

Especially may we be grateful when a practising artist possesses also a critical judgment that enables him to view art from an impersonal standpoint, and the ability to construct a system of philosophic criteria.

The combination of these qualities would give this book a psychological interest even if it had no further claim to our attention, but in his criticisms Mr. Blake combines patrician ideals with a rare catholicity of taste.

The arrangement of the book is the matter over which we have most cause to quarrel. In his introduction Mr. Blake first tells us that the later chapters on art-criticism may be read as self-contained, and a little later that he has " thought it inadvisable to present this mass of analytical work . . . without first submitting . . . the synthetized key to its co-ordination." At the same time he admits, as is inevitable, that the analysis preceded the synthesis in his own mind-process, but fails to realize that a similar mode of presentation would be received more naturally by the reader. There is about all the earlier chapters an air of phantasy mainly due to the fact that Mr. Blake has not as yet shared with us his data.

In his central thesis Mr. Blake puts forward a conception of the work of art as a mode of thought analogous to logical thought, though differing from it inasmuch as it presents simultaneous, not consecutive relations. A similar theory has been suggested by Mr. Roger Fry (see the term " logic of form " in " The Artist and Psycho-Analysis "), though whether or not Mr. Blake is aware of the fact we are unable to say, as the book contains no references.

Mr. Blake develops this theory by giving it philosophical significance : the valid work of art is one in which the relations of " plastic logic " foreshadow [or express ?] the integral relatedness of the Universe which he postulates as the Infinite.

We do not understand why, in this case, Mr. Blake draws a distinction between " plastic form " and " artistic message," thus re-opening the old controversy between " form " and " content " which he might so well have left in peace.

Among the " constants " of the relations which constitute art, Mr. Blake includes personality, both national and individual ; he also admits the existence of a mental type which seeks to institute a parallel to the indefinite, and thus only indirectly hints at the idea of the Infinite.

The characteristics of an art which parallels the Infinite are : Intellectual conception ; formal realism ; plastic logic ; continuous outline ; abstraction ; objectivity : of which the extreme example is Greek vase-painting. The characteristics of an art which parallels the indefinite are : Emotional expression ; dramatic realism ; romanticism ; chiaroscuro ; multiplicity ; subjectivity : of which the extreme example is Rembrandt.

The inclusion of the terms subjective and objective seems to introduce a classification of a different order from the rest ; for there is surely a sense in which Greek vase-painting (and all archaic art) might be considered the most intensely subjective of all art (save the extreme modern schools), dealing, as it admittedly does, with images representing concepts rather than appearances. On the other hand what shall we say of the confession of faith which Barrès makes for impressionism (here classed as a romantic movement) : " Mais moi-même je n'existais plus, j'étais simplement la somme de tout ce que je voyais " ? Can objective seeing go further than this ?

D. M. L.

English Life in the Middle Ages : by L. F. Salgrave. (Oxford University Press. Pp. 287. 7s. 6d.)

This book will serve as a most useful supplement to an ordinary text-book of the period for senior forms of a secondary school or for students or teachers. The connected nature of the material in each chapter has some decided advantages over the " contemporary document " method.

L'Ecole nouvelle et le Bureau international des Ecoles nouvelles : Adolphe Ferrière : in " Pour l'Ere Nouvelle " (an international review of new education). No. 15, April, 1925. Price 1 fr. 25 Swiss, or 1s. English. Cheques to Ferrière, Vevey.

This is a very convenient review of progress achieved under the encouragement of Dr. Ferrière and his fellow workers. The minimum programme of a "new school" is " before all a family boarding house situated in the country, where the personal experience of the child is at the base both of intellectual education—in particular by recourse to manual work—and of moral education by practising the method of relative autonomy of the scholars." As to maximum programme there are thirty ideals, including : (1) a laboratory of practical pedagogy ; (4) boarding houses with master and mistress ; (5) co-education ; (7) joinery, gardening and pet animals ; (10) excursions ; (12) choice of special subjects ; (16) individual work ; (17) collective work ; (19) concentration ; (21) scholastic republic, etc. Many of these points are now widely accepted ; however, not every school does everything. Hence a brief notation for reports received : thus for school B in England 1, 2, 3, (4), 5, 6, 7, 8, 9, 10, 11, 12, 13, (14), (15), (16), 17, 18, 22, 23, 24, 25, 26, 27, 28, 29, 30 : Total, 25 points. Interpreted : the school has not quite attained to the concentration of only two or three subjects per day or per term ; its republican constitution is undeveloped; drawing is not used in quite every lesson ; the spontaneous interests of the scholars are not the sole basis of the curriculum. One German school does everything, 30 points out of 30.

A list of schools is given : 19 schools in England ; 18 in Germany ; 6 in France ; 10 in Switzerland ; 1 each in Holland, Belgium, Sweden.

These are what some people would call " crank " schools, but their ideals are now very widely appreciated. It is true our elementary schools are not yet based on manual work, our newer secondary schools are not yet boarding schools, and our *soi-disant* public schools are not yet co-educational.

A more serious criticism may be that if less than sixty schools all try various combinations of the neglect or application of thirty different principles it will be very difficult to disentangle causes and effects, and how can we tell exactly which principles are the right ones. The schools may gladly be welcomed as adventures, but they can hardly be called " experiments " as that word is used in a scientific laboratory. There are no " controls," the schools are not arranged in pairs with régimes identical except for presence or absence of the one factor under inquiry. H. R.

Highlights of Geography : Europe : by D. S. Jordan and K. D. Cather. (Geo. G. Harrap and Co. Pp. xii+306, 9 maps, 21 airplane views, 110 photo reproductions, and index. 3s. 6d.)

Messrs. Harrap are to be congratulated on presenting to the British schoolboy a book on the geography of Europe that is fascinating in its interest, the illustrations of which are an education in themselves, and that it is written in a clear, bright, and forceful style. It is not a text-book. It does not give any formally organized treatment of the peoples and countries of Europe as is customary in the usual text-book or reading book. Its treatment is refreshingly novel and exhibits the originality of personal experience and investigation and the individuality of an alert and well-stored mind. It is a book to use as a stimulating adjunct to the organized treatment of Europe and its pages will provide many arresting ideas that can be more fully discussed in class or worked out by independent study.

The content of the book is centred round a number of fundamental physical topics that explain the build of Europe. The mere mention of some of them will show the authors' physical bias. Europe's changing shores ; The Story of the Wandering Boulders ; The Glacial Lakes of Switzerland ; The Peat Bogs of Europe ; Erosion by Sea and Land. These topics suggest an almost physical treatment ; but this is not so. Woven into the text and arising naturally out of the physical argument comes a consideration of topics of human life, and settlement and industry. The rise, progress and decay of cities, the varying changes in industrial situations, transport by sea, river, and canal, homes, buildings, historical incidents, legends, all enliven the story of glacier, volcano, earthquake, and mountain, and bring out in a hundred ways the ever changing connection between human life and physical environment. This is a book that will interest teacher and scholar. It will freshen and enliven the outlook and interest of both. W. P. W.

Education in Soviet Russia : by Scott Nearing. (Pp. 160. London: The Plebs League. 2s.)

Mr. Scott Nearing gives a vivid account of education in present-day Russia. He is naturally inclined to see the best side ; his stay lasted sixty days, and there is no evidence that he speaks Russian. Hence it is not unnatural to find discrepancies between his account and those of other hasty visitors. " Kilpatrick, Thorndike, Dewey, and other American educators are almost as well known in the Soviet Union to-day as they are in the United States," he writes. Yet Emma Goldman says that "Lunacharsky knew little of American public schools and Dewey." (" My Disillusionment in Russia, " p. 27). It is impossible to know what to believe ; and one falls back on such a judgment as "William Clissold's " : " Education is more general, but, if possible, less efficient." However, if one is prepared to accept the facts as stated, Mr. Nearing's story is of the greatest interest, for there is being conducted in Russia an experiment on a gigantic scale. The theories of various educational thinkers are being tried out, although the conditions do not appear very favourable : thus the teachers are, as a whole, untrained for the new work, they have inadequate equipment, and they are hampered (from our point of view at least) by the Soviet system, which prevails even in the schools. Everything must be done by the group. " We have abandoned the Dalton Plan. It produced too much individualism by setting up each student to do his own task." Universities, again, are suspect, as being too unrelated to life : the various subjects should not be concentrated in one centre but should be studied in the localities with which they are connected. The students, too, must return periodically to their factories, so as not to get out of touch with their fellows.

The Russian Government has an immense task—to build up an educational system out of nothing. The results should be watched, and considered reports written from time to time by impartial and well-informed observers. F. A. C.

The Handbook and Directory of Adult Education, 1926-1927. (Pp. 190. Deane and Sons. Paper, 2s. 6d. ; cloth, 3s. 6d.)

This handbook, compiled by a Committee of the British Institute of Adult Education, is tangible evidence of the valuable work that is being done by the Institute. It is the first complete survey of adult education in England—later editions will, it is hoped, include Scotland and Wales ; and it will be indispensable to all who are connected with the movement. Many people who are active in one section of the work will be amazed to find the diversities of present-day adult education : they are apt to think that the W.E.A. and University Tutorial Classes are all that count. The " Handbook " contains particulars of almost all activities that could possibly be included ; when one comes to bodies that are definitely political it is hard to know where to draw the line (thus if the Labour College is included, why not the Philip Stott College ?—and is the Liberal Summer School a form of adult education ?). There is a geographical survey of non-vocational activities, which will be as useful as it must have been laborious to compile. The Board of Education Regulations, Circulars, etc., are included, with particulars of scholarships, addresses of public bodies, etc.

Apart from its value as a book of reference, the Handbook should do sound propaganda work by showing L.E.A.'s what is being done, and what more could be done.

F. A. C.

Dreams and Education : by J. C. Hill. (Pp. 107. Methuen. 4s.)

This book, by a lecturer in the Education Department of King's College, London, is an attempt " to explain to parents and teachers some of the more important aspects of Freud's work." In this attempt the author has been most successful. He writes clearly and simply, with sensible, homely illustrations, and with considerable humour. Many a layman who would find Freud's own writings unintelligible or distasteful would accept the same doctrines as set forth by Mr. Hill ; as an example one may give the approach to the Œdipus Complex in the chapter on " The Family Relationships." Two chapters on " Education " contain much useful advice (based evidently on personal experience) on the bringing up of young children ; throughout one feels that the author is speaking about what he knows and has tested. There is also a very interesting chapter, " Instinct and Art," expounding Freud's theory of the " unconscious " element in art, and giving some striking examples. Such a book as this should do real good, for it will help to disseminate sound views about early education amongst those who would be unlikely to come across them elsewhere. It is also to be highly recommended to teachers and students in training. F. A. C.

Padagogische Monographien : edited by Dr. G. Deuchler and Dr. A. Fischer. Vol. XXIV.

Vom Wertereich der Jugendlichen : by Dr. W. Weigel. (Otto Nemnich, Leipzig and Munich, 1926. In paper covers 6 marks, bound 8 marks.)

One method of exploring the youthful realm of values is the questionnaire, and Dr. Weigel and the Educational Science Seminar of Hamburg University have used it with great success. He has been permitted by the teachers to lay his concern before their classes, but answers have been written as home work in some quiet hour without oversight of parents or teachers and have come to him in closed envelopes. Extraordinary pains have been taken both in oral address and in the phrasing of the questionnaire in hopes of evoking confidence that the returns will be treated as confidential; that they will be candid and objectively accurate; and that, if possible, permission may be obtained to use the returns for scientific purposes.

Questions for those between thirteen and sixteen years of age were such as: (1) Which lesson(s) do you like best ? and why ? Which lesson(s) do you not care for ? and why ? (2) What is your favourite occupation out of school ? Why ? Which out-of-school occupation is specially uncongenial ? Why ? (3) Which person(s) do you treasure most ? What are they to you ? Why do you treasure them ? Which person(s) do you find most uncongenial ? What are they to you ? Why are they uncongenial ? The second part of the book gives a selection of specimen answers.

Dr. Weigel is very much to be congratulated on the material he has evoked. There is no statistical summary of the answers; for that we must look forward to Volume XXV.

In the discussion on a paper by J. Don and J. Gregor " Preference of Pupils in Subjects of Study," at the Edinburgh British Association (1921), Educational Science Section (See Report, p. 454), it was suggested that choice of study is very often a veiled choice of teacher. The German evidence confirms this suggestion.

H. R.

Das Seelenleben des Jugendlichen. Charlotte Bühler : 2nd Edition. (Jena, Gustav Fischer, 1923.)

The authoress is lecturer in the University of Vienna. She is working at the problem of the psychology of the higher mental life, spiritual adolescence. Her material is anonymous and confidential. She has collected diaries which have been placed at her disposal for scientific purposes, and would welcome more of them. The material used represents boys and girls, mostly between ages thirteen and nineteen. These include the Flegel—and Backfisch—Jahre, the flappers and hobbledehoys.

Both this book and that of Dr. Weigel, noticed above, deserve to rank with Starbuck's " Psychology of Religious Conversion," though neither of them has been very much noticed in England. H. R.

A Book of Modern Verse : compiled by J. C. Smith. (Oxford University Press. Pp. viii+63. 1s.)

Keats : edited by S. S. Sopwith. (Christophers. 236, pp. viii+146.)

A Treasury of Verse : selected and arranged by M. G. Edgar and Eric Chilman. (Harrap. Pp. xiv+193. 2s. 6d.)

Poems of Action (Second Series) : selected by V. H. Collins and H. A. Treble. (Oxford University Press. Pp. 189. 2s.)

Any one of these books is useful for the purpose for which it is intended. Mr. J. C. Smith's " Book of Modern Verse " supplements very considerably his admirable collection of poems for schools, and it is none the worse for being brief. Mr. Sopwith's " Keats " is a further volume in the " Companion Poets " series and follows the method originated by the late Professor Green in helping by general exposition of the poems rather than by detailed annotations. Mr. Sopwith, however, does not perhaps keep as close to the original conception as some of his predecessors, in this respect. The third book, "A Treasury of Verse," has for its sub-title, " Poems of To-day and Yesterday," and gives a useful collection along conventional lines, and includes a great many old favourites. The printing is commendable. The last-named book is a Second Series, and is of a nature likely to appeal more particularly to classes of boys.

History of England : by G. M. Trevelyan. (Longmans, Green and Co., Ltd. Pp. 723. 12s. 6d.)

This volume is another welcome contribution to historical literature from Mr. Trevelyan's masterly pen. In it he shows the same wise selection of topics and judgment of values that he has revealed in earlier work. He explicitly lays stress on social development " in relation to economic conditions, political institutions and overseas activities." It is a solid text-book for the student and, at the same time, excellent reading.

Unemployment Among Boys : by W. McG. Eager and H. A. Secretan, with an Introduction by the Rt. Hon. H. A. L. Fisher, M.P. (Dent and Sons, Ltd. xii+164. 2s. 6d.)

Though small in size, this book gives a very comprehensive treatment of the problem of juvenile unemployment, after care, and continued education ; and Dr. Fisher's appreciation of the book is fully justified. The writers have first-hand acquaintance with the problems and the individuals of whom they write. They discuss lucidly and with a constant eye upon practical measures such questions as the Duration of Unemployment, the Effect of Unemployment upon Boys, and the Desirability and Nature of Continued Education. The book forms an excellent introduction to the whole question, and would be most suitable to put into the hands of teachers who are entering upon their work, particularly in industrial neighbourhoods.

Educational Year Book of the International Institute of Teachers' College, Columbia University, 1924. Edited by I. L. Kandel, M.A., Ph.D. (Macmillan Co., New York, 1925. Pp. xiv+650.)

The numerous changes and educational developments in the past decade make a book such as this extremely useful. The contributors are well-known authorities dealing, in Part 1, with what has been done in the principal European countries, Australia, Canada, China, South Africa, and the United States. England, Germany, and the United States are singled out as representative of areas giving special attention to problems of method, psychology, education, training of teachers, and so forth ; Professor T. P. Nunn, Dr. R. Lehmann and Dr. M. B. Hillegan contribute the information upon these topics in Part II, which concludes with an article on the " New Education Movement " by Dr. A. Ferrière.

Supply and Demand in Teacher Training : B. R. Buckingham. (Ohio State University. " University Studies," $1.50.)

A report of an investigation in Ohio, dealing with the number of teachers required, graduate and otherwise, demand according to status and type of school, specialist teachers, etc., length of training, and conditions of service. Among numerous recommendations whose force can be appreciated in England and Wales perhaps as much as in the States, are three of particular interest at the moment : (a) that one year of professional training is insufficient ; (b) that students in all teacher training institutions should be taught gratuitously ; (c) that such students should pledge themselves under a penalty for non-observance, to continue as teachers for a specified period after graduation. In Ohio it appears that the teaching profession is not as yet sufficiently attractive to secure an adequate number of recruits.

Ploetz's Manual of University History : translated and enlarged by W. H. Tillinghast. (G. Harrap and Co. Pp. xviii+766+lxxxix (index). 10s. 6d. net.)

Each main section of history—ancient, mediæval, and modern—is sub-divided into periods, in each of which the history of the main peoples or nations is separately epitomized, the treatment being chronological rather than topical. Proportion is graduated so that the last period (1883-1925) has as many pages as ancient and mediæval history combined. The sixty pages given to the Great War and its aftermath are particularly interesting.

Distinctly a useful reference book for the " general reader," especially as economic and cultural progress has not been ignored, and the very full index acts, as it were, as an historical dictionary.

Famous English Books and their Stories : by Amy Cruse. (George Harrap and Co., Ltd. Pp. 283. 2s. 6d.)

Gives some brief account of the writers of many of the greatest books and poems of our language and, in particular, of how they came to write those books and wherein lies their special significance. "The Canterbury Tales," "Wycliff's Bible," "Shakespeare's Plays," "Pilgrim's Progress," "Robinson Crusoe," "Waverley,", "Jane Eyre," "David Copperfield," may be given as samples. The book is not intended as a first introduction to such books ; in many cases the books will have been read before the pupil is mature enough for this history. But it supplies a kind of assistance for fuller comprehension and appreciation not given in such a form elsewhere.

A Brief Survey of English Constitutional History : by Professor D. G. E. Hall. (G. Harrap and Co. Pp. 270. 5s. net.)

This "convenient compendium" (as Professor Hearnshaw calls it in an introduction) gives a clear and unbiased account of the development of our constitution up to the present day. Though only a general sketch of about 50,000 words, it should be useful for pupils beginning to specialize in history as it embodies in attractive style the results of recent research. "Suggestions for further reading" and the index are both well done.

Common Science : by C. W. Washburne. (Bell and Sons, Ltd. Pp. 235. 3s., or in two parts, 1s. 6d. each.)

A book planned explicitly with a view to seizing upon the common interest of children in the world around them, and on the whole admirably successful. The practical problems for thinking out, not always for experiment, are an excellent feature.

AN ELEMENTARY SCHOOL SYLLABUS IN MATHEMATICS.

By T. PERCY NUNN, M.A., D.Sc.

(Professor of Education in the University of London.)

Reprinted from "The Forum of Education," Nov. 1924 and Feb., 1925).

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The Training College Bulletin

Edited on behalf of the
TRAINING COLLEGE ASSOCIATION
by
Lt.-Col. W. J. DOUGLAS,
Saltley College, Birmingham.

No. 11 *JUNE,* 1926

THE NEW REGULATIONS FOR THE TRAINING OF TEACHERS.

The Chairman of the Council of Principals (Prof. A. A. Cock) has sent the following notes :—

" With regard to the new Regulations, the first thing to note is the increasing liberty given to training colleges. It is more than liberty. It is a direct instruction to each college to make proposals concerning the academic and professional training which it provides.

"The regulations are Grant Regulations, and are to be read very carefully in the light of the financial situation. This would appear to bear on the very doubtful proposals with regard to a one-year course of professional training. The Council of Principals has discussed paragraph 8 of Circular 1377 and strongly protests against the proposal to award the certificate to young persons, who, having passed a second examination at their secondary school, take one year only at a training college, and this for professional training only. This regulation 9a seems to be fraught with many dangers. It disregards the necessary break between secondary and training college experience and provides an entirely inadequate period of experience in the larger life of a college.

"The regulations are the Board's first pronouncement of its intention to accept some of the recommendations of the majority and minority reports on the training of teachers.

"The terminology is considerably simplified. The distinction between elementary and secondary training, and between university training departments and training colleges disappears: 'Training College' are the words in future to be employed.

" Paragraph 10 of Circular 1377 relating to examinations states that the Board agrees with the Departmental Committee's recommendations as to university connection. As worded, Paragraph 10 of the Circular might be interpreted to exclude any alternative scheme of examination other than university schemes, and this paragraph needs to be made clearer.

" Article 16 (b) of the regulations relates to private students, and the circular suggests that in future training colleges will have liberty to admit private students in addition to the number recognized for grant purposes, and from this it follows that the Board itself gives up the task of attempting to adjust the supply of teachers to the demand. This again will need to be very carefully watched.

" It is regrettable that under Article 20 the distinction so far as finance is concerned between L.E.A. and other types of colleges is retained, and we should protest against this continued distinction.

" Article 10 deals with Third Years, and although deferred Third Years are quite good, training college authorities will probably agree that it is necessary to stress the need for a continuous Third Year in most cases."

At a recent meeting of the Council of Principals and the Standing Joint Committee the following resolution was unanimously passed: " While welcoming any encouragement given to intending teachers to stay at a secondary school long enough to pass a second school examination, this Council unanimously deplores the permission given by paragraph 8 of Circular 1377 to reduce the period of training of such students to one year, believing such a course to be detrimental to the education alike of the young teachers and of their future pupils."

TRAINING COLLEGES AND EXAMINATIONS.

There was a largely attended conference at the Board of Education on March 25th, consisting of the Vice-Chancellors and other representatives of the various universities, representatives of the governing bodies of training colleges, of the Teachers Registration Council, and of the Joint Standing Committee of the Council of Principals and the Training College Association. Lord Eustace Percy presided and was supported by the Duchess of Atholl and the chief officers of the Board. The President made it quite clear that the Board were anxious to give up the examination and would welcome the setting up of boards with university co-operation. He stressed the fact that the kind of relation between the colleges and the universities which he had in mind was one between equals. It was also made clear that the Board of Education would retain its hold over the practical teaching, would be prepared to co-operate where necessary in regard to inspected subjects, would retain its inspection and would itself either establish or sanction the establishment of a means of standardizing results, and would itself, either through granting or endorsing certificates, issue the licence to teach.

Various members of the conference put in a general way the points of view of those whom they represented, and it was then decided to form a sub-committee to explore the matter and report to the full conference in October. This sub-committee consists of eighteen members, *i.e.*, University representatives: Mr. F. J. R. Hendy (Oxford), Rev. T. C. Fitzpatrick (Cambridge), Prof. Graham Wallas (London), Prof. J. Strong (Leeds), Prof. C. W. Valentine (Birmingham), Prof. C. R. Chapple (Wales); L.E.A.'s: Sir Percy Jackson (West Riding), Mr. Percival Sharp (Sheffield), Mr. J. Graham (Leeds), Mr. G. H. Gater (London); Governors of Voluntary Colleges: Mr. G. L. Bruce (British and Foreign Schools Society), Rev. H. B. Workman (Wesleyan Education Committee); Training College Staffs and teachers: Mr. T. P. Holgate (Leeds), Miss Spalding (Bingley), Miss Richards (Stockwell), Prof. A. A. Cock (Southampton), Miss Lloyd-Evans (Furzedown), Mr. Frank Roscoe (T.R.C.).

The first meeting of the sub-committee was held on May 20th, the outcome of which was that the Board were asked to prepare, as an aid to discussion merely, a suggested area map of the universities and the training colleges. A further meeting is to be held on June 24th.

The representatives of the Joint Standing Committee are making clear that whilst university co-operation is generally desired there must be room for variety and the possibility of contracting out; that something more than a mere examinational connection is desirable in general, but that the autonomy of the colleges must be secured.

It was stated by the President at the full conference in March that he hoped that such colleges as found themselves in a position to do so would get into touch with the universities and endeavour to work out schemes of co-operation without waiting for the results of the conference. It is understood that where colleges work to the Board's 1926-7 syllabuses with students admitted next September, the Board will be prepared to examine such students on those syllabuses in 1928.

T. P. Holgate.

SALARIES IN TRAINING COLLEGES.

A conference on salaries was held at the Board of Education on February 5th. Lord Eustace Percy was in the chair and there were present, in addition to officials of the Board, representatives of the Association of Education Committees, the County Councils' Association, the London County Council, the Board of Supervision of Church Training Colleges, the Wesleyan Education Committee, the Roman Catholic Education Committee, and the British and Foreign School Society, together with representatives of the Council of Principals and of the Training College Association. The President of the Board intimated that in view of the coming changes in the organization of the colleges and of their relationship to the universities, any solution of the salaries problem should be by way of an interim settlement.

The case for the training college staffs was then put, and proposed figures were demanded by the other side. These were given, *i.e.*, £550 for the ordinary lecturer, £650 for at least a third in each college, and £750 for those holding very special posts, including vice-principalships. Figures for women were then asked for, and the reply was that we had been instructed to put forward scales for general application, but that we were prepared to discuss the matter in a reasonable frame of mind. We were met with a point blank refusal to discuss our proposals, and for a time a breakdown seemed more than likely. Lord Eustace Percy, however, produced a scheme which he had prepared and which proposed the adoption of the Burnham Award Scales for Secondary Schools, together with a pool for each college, which might be used, at the discretion of the college authorities, for dealing with such cases as were thought deserving. No estimate had been made by the Board as to the financial effect of the proposals, but a director of education present made a guess that they would mean about nine per cent. improvement on the present position. Both sides ultimately agreed to the formation of a sub-committee to examine the President's proposals. This sub-committee met in the afternoon, when, although it was felt that the nine per cent. estimate was too optimistic, it was agreed that, if a solution were to be found and accepted by the President of the Board in time to be operative from April 1st, it would be best to agree to the line suggested by the President. It was therefore agreed to submit his proposals to the various bodies concerned with a view to their acceptance.

The proposals were: (1) The Burnham Award Scales for Secondary Schools, subject to the modification that all previous service recognizable under that Award should be treated for salary purposes as equivalent to service rendered in the training college, counting as graduate or non-graduate service according as the teacher was at the time a graduate or a non-graduate; (2) For good honours degrees, posts of special responsibility, allowances to vice-principals, and any additional payments for special reasons of any kind, including additional payments to non-graduates, a margin to be built up by allowing £2 5s. for each man student and £1 15s. for each woman student, these allowances to be increased, if necessary, subject to the Board's approval, up to £2 15s. for a man student and £2 5s. for woman student. Upon careful analysis, in the light of statistics relating both to typical selected colleges and to the whole body of training college lecturers, these proposals were found to be most unsatisfactory. In some cases the lower margin did not meet present commitments and in some even the higher margin hardly sufficed to do that. The effect on the whole body of training college lecturers is seen when it is stated that the introduction of the Burnham Award scale would have resulted in a total loss to lecturers as a whole of about one per cent. on April 1st, 1926.

With respect to men, the position as a whole would have been substantially "as you were," though those at their maximum (a distinct minority) would have gained by the suggested change to the extent of £5. As regards women, those at the maximum (a little over half the total number) would have gained £4. Of the remainder, all would have had no increase of salary on April 1st, 1926, the greater number would also have received no increment on April 1st, 1927, also, and a number would also have got no increment on April 1st, 1928. When the increments began to accrue they would of course have been at a less rate than under the existing scales. The analysis showed that the proposed margin, as it related to the whole body of lecturers, would result in a gain of about 2½ per cent. with the lower margin and of about 4½ per cent. with the higher margin. The representatives of the "other side" had, however, insisted that whatever agreement was made should be not mandatory but merely permissive and made it quite clear that unless the Board furnished any extra money required it would not be forthcoming.

The special salaries committee of Joint Standing Committee of the Council of Principals and the Training College Association, after giving careful and exhaustive consideration to the matter, recommended the councils of those bodies that the proposals of the President of the Board be not accepted and to this the councils agreed.

A further conference was held at the Board of Education on March 26th, when, after a long discussion distinguished by marked sympathy on the part of the representatives of the governing bodies, it was agreed that the *status quo* should be maintained until a more favourable time, all parties promising that their various bodies would send representatives to confer when summoned by the President of the Board. An attempt was made to get the training college staff representatives to agree to a date before which negotiations should not be resumed, but this was refused, your representatives reserving the right to approach the President on the matter and to ask him to summon another conference when, in the judgment of the councils of their associations, the times were sufficiently favourable.

Amongst those who had to deal with the situation there will be few, if any, who will question the wisdom of the decision. The time was not merely unfavourable but was probably about as unfavourable as it could be. The financial state of the country is known to all, and added to this the L.E.A.'s were irritated and angry because of the proposed change in the basis of their grants. The proposed scheme of salaries was uncertain and uneven in its incidence, and where benefits might have resulted from it they would have been for the few and of small value at that, whilst many would have suffered severely. The result is disappointing—to none more than to those who have borne the brunt of the campaign—but there are these comforting thoughts (1) the existing scales, inadequate though they be, are confined to the staffs of training colleges. They are not now secondary school scales; (2) the feeling at the end of the series of meetings was so good that one looks forward to the time when negotiations may be resumed with a certain amount of pleasurable anticipation. Until that time arrives one can but advise patience in the assurance that the Council, having set its hand to the plough, will see the thing through.

T. P. Holgate.

BRANCH REPORT, 1925.

North-Eastern.

Chairman	MISS SPALDING.
Vice-Chairman	MR. BRADFORD.
Hon. Sec. and Treas.	MISS WRAGGE.

As an outcome of Dr. Ernest Barker's annual address to the Training College Association in January, in which he gave a forecast of changes likely to be recommended in the Departmental Committee's Report, the Committee of the North-Eastern Branch decided to initiate during the year in the general meetings of the branch a discussion of "the possibility of forming an organization of the colleges which, while safeguarding the standard of the Final Examination, shall secure the principle of the Internal Examination as already practised in many universities." Three general meetings of the branch were held during the year. At the first, held at York on March 7th, the Chairman (by the Committee's request) opened the discussion, and outlined some suggestions for enabling all training colleges in the branch which wished to do so jointly to approach all three local universities. After considerable debate a small sub-committee was appointed to draw up a draft scheme for further consideration. At the second general meeting, held at Newcastle on May 16th, this draft scheme (which had already been circulated to all members) was introduced for discussion by Professor Godfrey Thomson; he expressed his sympathy with the idea of bringing universities and training colleges into closer co-operation by means of the examination system, and read passages from the Departmental Report (which had that morning appeared) showing that certain recommendations of the Departmental Committee were in line with the scheme under discussion. Great diversity of opinion was expressed, but it was finally decided by a unanimous vote to refer the question for further consideration to a meeting consisting of principals of colleges of the North-Eastern Branch, of representatives of the three universities concerned, and of one representative of the staff of each training college and training department. This meeting was held at York on October 24th. In the meantime the Council of the T.C.A. and the Council of Principals had appointed nine sub-committees to report on those sections of the Departmental Report on which it was felt that opinion must immediately be voiced to the Board if the Minority Report was to be effectively opposed. Two of these sub-committees (that on examinations and that on relations with the universities) had considered as a basis of discussion a statement of certain general principles for the guidance of colleges wishing to approach universities, which, while avoiding the detail of the North-Eastern Branch Scheme, resembled it in general policy. This statement of principles had been passed with certain amendments by the Council of the T.C.A. and also by the Council of Principals, and was incorporated in a series of proposals which were to be laid before the whole Association for discussion in January. The special sub-committee of the branch therefore decided to limit its discussion to this statement of principles, and to shelve for the present all discussion of detail; they adopted the statement with emendations, but it was expressly stated at the end of the emended document that "it is well understood that any college is free to remain out of any such scheme." The emended document was circulated to every member of the branch and was discussed at the third general meeting of the year held at Leeds University on November 14th. While the statement received a considerable measure of support, it was evident that there were some colleges in favour of the maintenance of the *status quo*, and very anxious that nothing should be done to convey the impression that opinion was unanimously favourable to development on the lines suggested.

At this meeting the report of the Religious Education Sub-Committee was also discussed, in so far as time permitted, but no vote was taken, as the time given to the question was necessarily much curtailed.

SECTION REPORTS, 1925.

Domestic Subjects.

The meeting on January 5th, 1926, was attended by a disappointingly small number of members, therefore the business carried out was of a somewhat informal nature.

1. The following subjects were suggested as possible alternative Third Year Courses to those already offered, the subjects to occupy all or part of a year in conjunction with allied subjects to complete a year.

   1. Economics and settlement work.
   2. Horticulture.
   3. Institutional administrative work.
   4. Academic work.
   5. Advanced handcrafts.

2. The interchange of teachers in the Colonies and England is arranged by the League of the Empire. The League has received applications from colonial teachers for exchange, but has had no application from English teachers, so has only been able to arrange one exchange among domestic subjects teachers.

The English Speaking Union is at present making enquiries in U.S.A. regarding exchange between England and America, and the Union looks upon the idea with great favour and is making efforts to come to some conclusion through their Vice-Chairman, who is at present visiting America.

3. The possibility of a better name than domestic subjects was discussed, but no conclusion was reached.

Science.

The Teaching of Nature Study and General Elementary Science in Elementary Schools.

Only two reports were received representing a survey of schools in three districts. From these and from opinions collected in other ways the following points appear :—

1. The absence in many cases of any attempt at systematic work in Nature Study or Physical Science.
2. The limited choice of subjects for lessons in Nature Study.
3. The want of living interest in the treatment of material selected.
4. Repetition of subjects from year to year.
5. Limited attempts to include any animal study.
6. Failure to use the opportunities for observation, practical work and expression in subjects which offer scope even with limited accommodation and equipment.
7. Lack of teachers interested in Nature Study or Elementary Science, or failure on the part of the schools to allow such teachers to specialize.

Experiments in the Teaching of Biology in Relation to Hygiene and Education.

In response to the enquiry reports and comments on experiments in progress have been received from the following training departments and colleges: Bingley, Birmingham University, Brighton Municipal Training College, Chichester, Hereford, Homerton, Kenton Lodge, Newcastle-upon-Tyne, Norwich, Peterborough and Ripon. In most cases the experiments were too recent to admit of any estimate of the value of the courses, but they are generally considered worth while in spite of obvious difficulties and limitations.

A summary of the experiments will be circulated.

Joint Meeting of the Principals of Teaching, Hygiene, and Science Sections.

In view of the experiments in progress and insufficiency of data so far available the conveners posponed the joint meeting.

Third Year Diploma Courses.

The final report of the Biology Sub-Committee was passed by the Council of the Association on February 7th, and sent by the Council to the Registrars of all the universities and university colleges. The Zoological Section of the British Association also, at its January meeting, passed a motion urging the importance of General Biology in education, and this motion was sent to the Board of Education, the Training College Association, and all the universities and university colleges.

A Diploma Course entitled "Diploma in Animal and Human Biology" has been established in University College, Aberystwyth, and the Universities of Bristol, Leeds and London are also favourable to the scheme.

At the meeting of the British Association in Southampton a Research Committee was appointed by the Botanical Section to consider the report of the Biology Sub-Committee, and representatives of the Science Section were invited to act on the committee. A report was drawn up which was favourable to the scheme as a whole. This was passed by the Council in October, and was then sent by the Convener to the Universities of London, Leeds, Bristol and Aberystwyth. This report will be published in the BULLETIN.

Branch Sections.

A report has been received from the Southern Branch, but no reports have come from other branches.

Oxford Short Course.

A full report of the Oxford Short Course appeared in the autumn number of the BULLETIN. An article on "Micro-aquarium Technique," specially written by Monica Taylor, will be circulated to all colleges, and a set of lantern slides illustrating Professor Stopford's lectures on "Form and Function," for the general use of the section, may be borrowed from the General Convener.

Handwork and Needlework.

No meetings were held in this section between January, 1925, and January 5th, 1926, when the annual meeting was held at St. Mark's and St. John's College. This meeting was well attended, there being sixteen members present.

There was much interesting and helpful discussion on the following points.

1. The educative point of view of handwork and the craft point of view.
2. The time allotted to this subject in different colleges.
3. The types of written papers given to "D" students, under the new marking system.
4. The training of "good taste."

Other matters of business were dealt with, the chief being:

(*a*) That a credit mark should be given for technical skill in this subject, apart from the capacity to teach it.

(*b*) That the words "Needlework *and Handwork*" should appear on the certificate of a student obtaining a credit in this subject.

The following resolution was passed:

"That this section would like to know what action the Council has taken, and is prepared to take, on resolutions sent in by the section."

During the year a joint meeting was held of the Midland Section at Birmingham, and an exhibition on arts and crafts was held at Derby.

Music.

During the year 1925 attempts have been made to consult with authorities on such subjects as Music in the Matriculation Examination, the Place of Music in Education, and Points arising from the Syllabus as it now stands: such as, students who do not take music in training colleges, and the advisability of every infant teacher taking music, etc.

A meeting was held at Whitelands Training College (by kind permission of Miss Mercier) on the subject of a proposed enquiry into the question of "Music in Training Colleges." A scheme was discussed and correspondence, ensued but the enquiry has not yet eventuated.

Some preliminary work has been done, as was suggested at the January meeting, in the matter of consultation with the head mistresses of secondary schools and music lecturers of training colleges. But events are moving very slowly, on account of the difficulties which present themselves to the head mistresses *re* arrangement of syllabus, inadequate staffing, etc. At the same time much help has been received from this source, and it would appear that head mistresses realize the real position of music in education.

Although progress is slow, it is in the right direction. Some of the branches also report useful discussions on these subjects, notwithstanding their difficulties of distance.

It is with pleasure that I report an increase in the membership of the Music Section.

Miss Spalding, of Avery Hill, has accepted the General Convenership for 1926, and we welcome her heartily.

Mathematics.

There is little to report with regard to the work of the section during 1925. At the annual meeting in January, there was a useful informal discussion in which various important points involved in mathematical teaching were raised, particularly in relation to the teaching of proportion and the methods of introducing geometry into the work of the elementary school. It was hoped that some authoritative body of opinion might have been formulated by the section with regard to these questions, but unfortunately this has not proved to be possible. In this connection it is necessary to repeat and emphasize what was said in the last report, viz., that most of the branch sections are too small and widely scattered to make their work really effective. Some rearrangement of the machinery of branch sections seems to be necessary, but this involves the larger question of the constitution of the branches themselves.

Dr. Curzon (Goldsmiths' College) has been elected General Convener for 1926. Having regard to the probable changes in the conditions relating to examinations, it is hoped that some useful work may be done during this year in the matter of drawing up possible syllabuses.

English.

At the meeting of the section on January 7th, 1925, Miss Henderson, Bingley Training College, was elected Convener.

The section discussed the Composition paper set in the Board of Education Certificate examination in July, 1924, and members called the attention of the section to the fact that the Board had promised that this paper should contain an essay subject suitable for Advanced Course students who had taken a special syllabus drawn up by the College but that no such subject had been set. Members representing colleges which had their own syllabus in English mentioned the inconsistency between the results of the examination in English Literature conducted by the college, and the result of the essay paper, marked by the Board. The following resolution was proposed and carried :

> " That the English Section of the T.C.A. is desirous of seeing the essay paper become a more integral part of the literature papers, and would like to claim for those colleges which set and mark their own literature papers a similar freedom in regard to the essay."

A meeting of the section was held on January 5th, 1926.

Mr. B. E. Wilkinson (Leeds) opened a discussion on the position of speech training in the training college. He pointed out that actually a student's final mark is rarely or never affected by bad speech and advocated the reinstatement of reading and recitation as an examination subject. This suggestion met with opposition, but the need for improved speech was unanimously acknowledged, and it was pointed out that some peripatetic specialist teachers of phonetics and voice production would be a great help to the training colleges.

Miss Terry (Furzedown) then introduced the subject of the English language papers set in the Board of Education's Certificate Examination in July, 1925. She considered the papers unsuitable because they demanded only the knowledge acquired by the students at their secondary school, because the alternative questions were not of equal difficulty and scope and because the passages set for précis and paraphrase were poetic and dramatic and could not be rewritten with profit.

All speakers did not agree with the first objection to the papers.

It was finally decided that the section should ask for a conference with the Board on the subject of the English language papers.

Principles of Teaching.

The section has shown considerable activity throughout the year, the chief topic of discussion having been the syllabuses in Principles of Teaching or the bases of such syllabuses. No decisive majorities in favour of any particular scheme or method of devising schemes were recorded. In the majority of branches the meetings of the section merged into meetings of the whole branch. In most branches the question of the relation of the section to the general work of the Association was discussed. At the annual meeting it was resolved " to ask the Council to take the necessary action to define the relation of the section to the Council," and at the same meeting a resolution was passed favouring a scheme which would mean that the wider problems of professional training hitherto regarded as the work of the section would be considered by branches or Education Committees of branches and that the Council be asked to consider this and take necessary action.

Dr. D'Arcy Chapman, St. Mark's, was elected Convener for 1926.

Hygiene and Physical Training.

Meetings.

The annual meeting was held at University College on January 7th, 1925. A discussion took place on Dr. Reaney's motion, which was to come before the joint meeting of the Principles of Teaching, Science and Hygiene Sections later in the day. After several members had spoken the following resolution was carried :—" This section does not desire a revision of the Hygiene Syllabus at present." The opinion was expressed that colleges should experiment in the direction of giving some course in biology to all students. (This is now being done by a number of colleges.)

A detailed account of the joint meeting was given in the BULLETIN of February, 1925.

In July, a short course in Biology and Hygiene was held at Oxford: a general account of it appeared in the BULLETIN of November, 1925. During it, a largely attended meeting of the section was held at St. Hugh's College; among the subjects discussed were lectures given by visiting lecturers on topics connected with hygiene; the examination paper set by the Board in 1925, in connection with which it was urged that a wider choice of questions should be given and a longer time allowed for the paper; the time allotted to hygiene lectures in college time-tables, the usual amount appearing to be one period in one year, two periods in the other of the Two-Year Course; the teaching of Hygiene to boys, a proposal made by Mr. Valentine Davis (Crewe) with regard to the production of a loose-leaf text-book in hygiene.

A resolution was passed that the branches be asked to discuss Mr. Davis' proposal; so few members, however, voted on this that it was felt that the question needed further discusson at another meeting of the whole section.

By the request of several members, another meeting was held, at which Dr. Winifred Cullis opened a discussion on the Teaching of Sex-Hygiene to Girls, giving her own experiences when speaking at schools or factories.

Books.

In July, 1925, a very useful " Provisional List of Books on Hygiene " was drawn up by the Medical Branch of the Board of Education and a copy was sent to each college. In November, in accordance with the arrangement made a year ago, Miss Watkins-Pitchford sent a further short list of books and current articles to the Convener; this will be forwarded to members in due course.

The Future.

The Convener having announced that she was unable to stand for re-election nominations for a new Convener were obtained in November, and as the result of a postal vote, Miss J. Williamson, The Training College, Dudley, Worcs., was elected.

It is hoped that co-operation with the Science Section will continue, as many subjects are of interest to members of both sections, *e.g.*, the question of the teaching of hygiene in girls' secondary schools and the basis of science work required for it, which is now being considered by the Secondary Schools Associations. In this connection there is a valuable article on " Health Education " generally in the 1924 report of the Chief Medical Officer of the Board of Education.

History.

Two resolutions were drawn up at the January meeting in 1925, to be sent to the Council asking that they might be sent on to the Board.

1. That in every history paper (with the exception of Scheme I, Advanced, where the time has already been specially allotted) half-an-hour extra should be given for the consideration of the paper.

2. That the Board of Education should be asked to put the advanced history papers of the final examination at an earlier date on the time-table.

The first resolution met with success. The Board proposed to make arrangements on the lines suggested in connection with all papers in history at the final examination, 1925. The Council decided that our second resolution was not a matter for it to take up with the Board, and suggested a better method would be for individual history tutors to put the matter before their principals, who might make the recommendation as to change of date when the Board sent the draft timetable to the colleges.

At our meeting on January 5th, 1926, this suggestion was adopted.

Dr. Firth is Convener for 1926. We are looking forward to a useful discussion at our next meeting on how to improve the History Syllabus and the teaching of history generally in our elementary schools. Dr. Firth is collecting syllabuses of various types and is getting into touch with Branch Conveners so that our own methods in the various areas can be taken as a starting-point for the enquiry.

French.

A meeting of the French Section was held on January 5th, 1926, at the College of St. Mark and St. John, Chelsea. Only five members were present and those were all from the provinces!

The minutes of the last meeting were read and passed, after which there was a discussion on method and books.

A request in writing had been sent by one member of the section asking that section meetings might take place more frequently. The members present did not see how this could be accomplished and the matter was left open.

It was unanimously decided to ask the Board of Education if any financial help could be given to enable students to attend a vacation course in France after their first year in college.

The suggestion that the Board be asked to prescribe set books in French at the Final Examination was defeated.

The question of the advisability of an ordinary course in French was discussed. The section felt that there was no pressing need for the introduction of such a course, but it was decided to ask the Board what will be the position of a student who passes in the ordinary standard only, now that all subjects are to be mentioned on the certificate. Since there is no ordinary course in French there can be no ordinary pass, and this might make the subject compare unfavourably with other subjects.

The meeting concluded with a demonstration of the use of the Linguaphone. The Linguaphone Institute, 24-27, High Holborn, London, W.C.1, kindly sent down one of their machines, and a demonstrator explained its uses. It was felt that this instrument would be a valuable asset in colleges which could meet its cost. The gramophone costs £8 8s., though there is a cheaper one at £4 4s. The first course (15 records) costs £6 6s. and the advanced course £4 4s. Write to address given above.

BOOK REVIEW.

First Steps to Parnassus: W. E. Williams. (University of London Press.)

We are constantly hearing it said that the number of people who read poetry nowadays is small and likely yet further to decrease. If this be so (and it is a highly debatable point) then the reasons need to be sought and the remedy applied; for the standard of a people's literary appreciation is no bad guide to that people's outlook upon life. True appreciation of poetry, the judgment formed by a critical mind, is the result of an intelligent study of the matter, the form, and the style of that poetry. Mr. Williams points out in his introduction that the pleasure which some people find in a poem is not rationalized, they do not know and "may not feel any urgent need to know" how the poet succeed in charming them. It is his object to show how their satisfaction would "be enhanced by an understanding of the means by which the poet has fascinated them." The teacher must agree that only so can he succeed in preparing his pupil for the time when he will have no constant guide to assist him in his study of literature. It is the only sound basis on which to build. There is the ever present danger that over analysis may spoil the poem for the child or for the general reader, to whose aid "First Steps to Parnassus" is offered. Both the general reader and the avowed student of poetry will find much to assist them towards balanced judgment and sound understanding in this book. They will find, not that over-analysis which we condemn, but a sympathetic consideration of the subject, illustrated by an abundant use of well-chosen examples and well framed exercises.

A.H.B.

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Edited on behalf of the
TRAINING COLLEGE ASSOCIATION
by
Lt.-Col. W. J. DOUGLAS,
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Attention is called to the report of the Committee on the Training Colleges and the Universities regarding the final examination of students in training after 1928, which is printed with this issue, together with the replies of the President of the Board to certain recommendations therein. These will be found to be interesting and will be helpful to the colleges in making suitable arrangements with universities or other examining bodies.

Much to the disappointment of the council and members Miss Spalding, through reasons of ill-health, has felt compelled to retire from the Presidency of the Association, which she was due to assume next year. She has been particularly assiduous in many ways in the educational activities of the Council, and her retirement on the eve of holding the highest office is much regretted. All members will join in wishing her a speedy recovery of normal health.

The membership of the Association is steadily increasing, but there are still several colleges that are insufficiently represented on the membership roll. In their own interests as well as for the welfare of the whole Association, it is hoped this will soon be remedied.

The annual meeting will take place at University College, London, on Friday, January 7th, 1927, and the Council and sections will meet on the previous day. The subject for discussion will be : " The Training College Curriculum : Is there an Essential Minimum ? " The Joint Standing Committee will meet the Board on January 8th.

THE NEW REGULATIONS.

The issue in draft of the revised regulations for the training of teachers, dated June 1st, caused great perturbation amongst those directly interested in the training colleges. The particularly disturbing clause was in Article 9(c), which, as developed in the accompanying Circular 1377, made it clear that it was the intention of the Board that any student of eighteen years of age who had passed a second school examination might be admitted to a training college for a course of one year's professional training and at the end of it be launched into the schools as a fully trained certificated teacher of nineteen years of age.

The officers and Council of the T.C.A. got to work at once and in conjunction with the Council of Principals sought an interview with the President of the Board. After some little difficulty this was arranged and a strong case was presented against the Board's proposal as being detrimental to the children of the schools, to the young teachers themselves, and to the training colleges. Contact was made with the secondary teachers, particularly through the Head Mistresses' Association, and they made strong protest to the Board. A meeting of the Joint Standing Committee of the T.C.A. and the N.U.T. was held, and the latter body was found to be in strong opposition to the proposal, and it pressed its views on the Board by deputation. All this opposition was, of course, reflected in Parliament, and, when the Board of Education estimates were before the House of Commons on the 22nd July, the President announced that he had determined to leave the whole question of the length of training courses to the new bodies, which he hoped to see set up, for the purpose of conducting the examination of students in training colleges; meanwhile, the existing conditions were to obtain.

This really meant that, so far as the T.C.A. was concerned, the battle was won. It had been a sharp, hard fight, noteworthy for the way in which the various sections of the profession stood firmly together in opposition to what they regarded as a retrograde proposal. It may be invidious to make distinctions, but the T.C.A. certainly owes thanks to its secretary for the strenuous work she did in connection with this matter.

When the regulations were issued in their final form accompanied by an explanatory Circular 1383, it was found that all reference to length of courses was omitted from Article 9, whilst in Circular 1383 the President's statement to the House (see above) is reiterated, and it is further stated that " pending the completion of the new arrangements under Circular 1372, they (the Board) will make no change in their present requirements as to the length of the courses which they will approve."

Circular 1377, which accompanied the draft regulations, stated that the Board would not, as a rule, recognize for grant any expenditure on pupil teachers or student teachers who were not recognized before 1st August, 1927. This was to be welcomed by the T.C.A. as furthering its declared policy. Unfortunately, opposition from powerful L.E.A.'s has resulted in a statement in the subsequent Circular 1383, to the effect that as many authorities believe in the advantage to some candidates of a period of pupil or student teachership or regard that system as necessary for the recruitment of candidates, the Board "retain power to meet such cases."

The attention of the Board was called to the paragraphs in the draft regulations relating to private students, whereby, owing to faulty expression, it would appear that such students may be admitted, even though they may be devoid of all the qualities which the ordinary student must possess. The Final Regulations show that the wording has been amended so as to put this matter right.

The draft regulations in Article 10 provided for a deferred third year's course, but no provision seemed to be made for a third year continuous with a two-year course. Strong representations were made to the Board by deputation, and an assurance was given that no change of policy was contemplated, but that, as formerly, all proposals regarding a third year's course could be dealt with individually by the Board.

The opposition of the T.C.A. and Council of Principals to the continuance of the dual system of grants to L.E.A. colleges and others was voiced by deputation, but with no present result.

The regulations in their final form are generally to be welcomed. Like the regulations for elementary schools, secondary schools, and further education, they have been considerably curtailed in matter and every redundant word has been pruned away. The regulations are thus more general and elastic and should be a good preparation for the " new bodies " contemplated in Circular 1372. Thus in place of the seventy-eight pages of the old regulations with their wealth of detail as to subjects which may be taken from this group or that, all that we find in the new regulations is (see Article 8): " The courses of Education and professional training in a training college must be in accordance with a suitable curriculum and must include a systematic study of the principles and practice of teaching. Satisfactory arrangements must be made for the examination of students at the end of their course." In fact the nine pages of the new regulations may be summarized (in the words of a former officer of the Board) as follows: "Suitable students must be housed in suitable premises, be charged suitable fees, be taught by a suitable staff, in accordance with suitable syllabuses, and, finally, must be suitably examined."

T. P. HOLGATE.

CONDITIONS OF SERVICE COMMITTEE.

Several enquiries regarding salaries and superannuation have been before the committee and advice has been tendered to the members concerned. A query concerning income tax has led to a decision to obtain legal advice as to the prospects of being able to get concessions for expenditure on such things as books and apparatus which might properly be described as expenditure incurred in the discharge of a lecturer's duties. Previous attempts in this direction have been made by certain associations of teachers without effect. In some localities, however, from time to time, supervisors of income tax have made small concessions, and it would be helpful if members who know of such cases would inform the committee.

T. P. H.

CONFERENCE WITH HEAD MASTERS AND HEAD MISTRESSES.

A well attended conference between the Training College Association, the Association of Head Mistresses and the Incorporated Association of Head Masters was held at the Burlington School, London, W.1, on Friday, October 15th.

Miss Sparks, Head Mistress of Cheltenham Ladies' College, in welcoming the conference, said that since the last joint conference the Departmental Committee's Report had given rise to many far-reaching developments in the history of training. She particularly welcomed the movement towards continuous secondary education until the age of eighteen. Speaking of the scope of the discussions of the conference, Miss Sparks referred to the growing abandonment of the idea that training should be confined to the elementary teacher and she hoped questions affecting elementary, secondary, and university work would be discussed.

Mr. Holgate before opening a discussion on the possibility of giving greater attention in the secondary schools to such subjects as handwork, music, and art, expressed the thanks of the T.C.A. to the Association of Head Mistresses for their strong cooperation in the summer in opposing the proposed one-year training course and the draft of the revised regulations.

Turning to the subject of the discussion, Mr. Holgate said that although in many schools music and art held a fair position among the other subjects of the curriculum, he thought that not enough attention was given to handwork. There was a strong tendency to drop this subject in the higher forms of the school. He advocated that handwork should be made an optional examination subject, so that some proportion at least of training college students could enter college with a better preparation in the subject.

Miss Edmonds (Whitelands College) deprecated the growing tendency in the secondary schools to replace ear training and sight singing by eurhythmic and musical appreciation, with the result that students entered college with no grounding in the actual grammar of music. Many training college students suffered, moreover, from having had indifferent private music lessons. Those students who had studied an instrument at school were of a better standard.

From the discussion that followed it was pointed out that great advances had been made in handwork in the schools during the last five years. In many schools ample provision was now being made for the subject. Sympathy with the training college point of view was expressed and it was hoped that the subject would grow in importance.

Third Year Courses in Training.

Miss Mercier, speaking of third year courses, explained at the outset that her remarks bore no reference to degree work. There were two types of third year course:

(*a*) the *continuous* third year, following immediately on the two year course, and

(*b*) the *deferred* third year, taken after an interval of teaching.

The deferred third year came up against a good many difficulties. There was the reluctance of the teacher to leave a post, financial or other obligations which had been incurred since leaving college, and the difficulty of regaining the habit of study. For these reasons she felt that the continuous third year was the more practical course of the two. Miss Mercier described the third year courses that were open to students. At present it was difficult to get enough students to take the courses, and she thought the situation would be helped if the heads of secondary schools would explain to their pupils before they left school the advantages of staying a third year at college and taking a diploma or some other course. Of the educational advantage Miss Mercier thought it was unnecessary to speak; on the professional side she pointed out the growing recognition of the specialist in the elementary school. One was accustomed to think in terms of older children and younger children. Broadly speaking it was the university student who was best fitted to teach older children and the training college student to teach younger children. As a link between the two the third year course provided a training of the greatest value. A discussion followed.

Practice in Secondary Schools.

Mr. E. Bradford (Sheffield University) spoke of the great difficulty that was experienced by university training departments in getting adequate facilities for secondary school practice for their students. The number of degree students was increasing and proportionately greater difficulties were arising. The situation might be somewhat eased if there were a greater correspondence between the number of pupils in the school and the number of students that the head would be prepared to take. At present large schools did not as a rule take any more students than small schools. He wished that it were more often possible to get expert teaching in secondary schools to give demonstration lessons in front of groups of students. He thought that students should have the opportunity of practice in more than one school.

Miss Punnett (London Day T.C.) disagreed with the view that students should practise in several different schools. She thought the best experience for the student was to get to know one school thoroughly and to take a definite, if small, part in its life. She did not experience the same difficulties in London that had been described as existing in the north.

On the side of the head mistresses and head masters it was urged that it was not easy to arrange the school time-table to suit the convenience of students in training. It would be of assistance to the schools if students could begin their teaching practice at the beginning of the school term and remain until the end, instead of keeping the shorter university term. It was thought that the practice of demonstration lessons in secondary schools was becoming fairly general.

Following this there was a short discussion on the question of the applications of students for entrance to more than one training college. It was suggested that the situation would be eased from the point of view of the heads of schools if the report on the applicant were not asked for until the training college Principal was satisfied that the examination qualifications were of a level to warrant admission.

The following resolutions were proposed from the chair and carried unanimously :

(*a*) Re-affirmation of resolution carried at the 1920 conference and re-affirmed in 1924 :

“ That this conference is of opinion that the advantages of the student teacher year are more than offset by the break in the school education which it necessitates, and that the present system should be so adjusted, both financially and otherwise, as to encourage the intending teacher to remain at the secondary school until eighteen whenever possible.”

(*b*) “ That this conference desires to place on record its appreciation of the action of the Board of Education in removing from the regulations for the training of teachers the clause which would have rendered permissible a one-year course of training for students who hold a second school certificate. ”

TEACHERS REGISTRATION COUNCIL.

For some months now the T.R.C. has been engaged in drawing up a new constitution for itself, and this will soon be submitted to form the basis of a new order in Council. Under the new constitution the members of the Council will not represent associations as they do now, but registered teachers. Provision is made for the representation of universities, and teachers outside the universities are divided into three categories, viz., teachers in public elementary schools, teachers in secondary schools, and specialist teachers. Each of these three divisions is to be represented on the Council by twelve members. Those engaged in the training of teachers come under “ Specialist Teachers ” and have one representative on the Council. Thus, according to the new constitution, every one engaged in the training of teachers who is registered will have the right to nominate a representative of the training of teachers provided twelve others sign the nomination, and later he will receive the names of all those nominated and vote for one. The rise of new associations and the decay of older ones has made the present constitution of the Council out of date. In future every registered teacher will vote directly for his representative, and that not in virtue of his membership of any particular association, but in virtue of his registration. This will be the most important feature of the new Order in Council, and fuller details of the new constitution will be available for the next number of the Bulletin.

Winifred Mercier.

THE REPORT OF THE COMMITTEE ON UNIVERSITIES AND TRAINING COLLEGES.

1. In February, 1926, the President of the Board of Education invited a conference consisting of representatives of Universities and University Colleges, Training Colleges, Local Education Authorities and other bodies interested in the training of teachers to meet him for the consideration of the future relations of universities and training colleges with special reference to the suggestions for the examination of students in training colleges put forward in the Board's Circular 1372. The conference met at the offices of the Board on 25th March, and, after some discussion, resolved to set up a committee " to consider in what way co-operation between the universities and training colleges can be best effected," and this committee, the composition of which is shown in Appendix A, was instructed to present its report to the conference in October, 1926. The committee now report as follows :

2. We were instructed in our Terms of Reference to consider in what way co-operation between the universities and training colleges can be best effected. These terms are very wide, and the shortness of the time at our disposal makes it quite impossible for us to consider our subject in all its aspects. We are conscious of the larger issues, but we have limited ourselves in the present report to the aspect of the problem most immediately urgent, namely, the measure and kind of co-operation between universities and training colleges which is necessary for the purpose of conducting the final examination of students in training colleges.

3. We came to the conclusion at an early stage that little if anything was to be gained by attempting to draft any single uniform scheme for co-operation in this respect between universities and training colleges. From the informaton at our disposal, we decided that our most fruitful course of investigation would be to explore the possibility of securing such co-operation on a geographical basis, and for this purpose we prepared a list of geographical areas which we thought might serve as a basis for discussion, noting in each area the names of the universities or university colleges and the training colleges contained in it.

4. In preparing this list we had at the outset to consider two points of principle, first, whether the Universities of Oxford and Cambridge should be included in the list, and secondly, whether the university colleges should rank with universities for the purposes of such co-operation with training colleges. So far as the first point is concerned, we were informed by the members of our committee who represent Oxford and Cambridge that these universities would not be likely to undertake responsibilities in this direction of a merely local character, although what was said did not exclude the possibility that one or other of these universities might be willing to co-operate in an examination scheme not limited to a particular area if such a scheme should be set on foot. We decided in these circumstances that these two universities should not be included in our provisional list of groups, without prejudice to the right of any training college or group of colleges to make individual approaches to one or other of them. On the second point we were informed that the Standing Committee of Vice-Chancellors were agreeable to the inclusion of university colleges as ranking with universities for the purpose of co-operation with training colleges. We, therefore, included the university colleges in our list of geographical groups.

5. Our next step was to circulate our list of geographical groups to the training colleges concerned, and to find out from them whether the suggested grouping appeared to them suitable as a basis for local negotiations. We accordingly prepared a letter setting out the result of our deliberations up to this point, forwarding a list of our suggested groups and requesting the observations

of the training colleges thereon. This letter with its enclosures was issued on 2nd July, 1926, and is reproduced in Appendix B of this report.

6. We did not feel that we were in a position to ask the universities to take the matter formally into consideration at this stage. We thought it proper, however, to keep them informed of our action, and we accordingly forwarded to each university included in our list of geographical groups a copy of our letter to training colleges, under cover of a letter which is reproduced as Appendix C of this report.

7. It will be observed that at the end of the second paragraph of our letter to training colleges we suggested that each group of training colleges named in our list should arrange a meeting at which representatives of their governing bodies could discuss among themselves the suitability of the group proposed. We thought it desirable in the limited time at our disposal that such meetings should take place at the earliest possible moment, and in order to advance matters we authorized our Chairman to communicate with some representative person in each area asking him or her to undertake the responsibility for convening the group meeting. The persons invited to act as conveners of group meetings, a list of whom will be found in Appendix D of this report, accepted this invitation, and we desire in our report to express our appreciation of the valuable assistance which they have rendered to us.

8. We have received from the conveners of the group meetings and from a number of individual training colleges reports of the progress which has been made in their areas (up to 19th October).

We summarize these reports below, and in order that members of the conference may have some means of comparing the size of the groups, we have noted against each group the number of the training colleges included in it, and the number of students who might be expected to require examination annually, according to the latest figures available, viz., those for 1925. We have included in this latter number all students who in that year took either the Board's examination or a College examination in whole or in part, together with the ex-students who took the examination for a second or third time. Students in Training Departments of universities and university colleges and students taking only degree examinations are not included in the numbers given.

GROUP I. (NORTHUMBERLAND AND DURHAM.)

8 Training Colleges. 530 Students for Examination.

On 28th June a conference was held, attended by representatives of the Council of the Durham Colleges in the University of Durham, and representatives of the following training colleges: Neville's Cross, Bede, St. Hild's, St. Mary's, the Northern Counties' Training College of Domestic Science, and Darlington. This conference drew up a scheme, a copy of which will be found in Appendix E of this report. A further conference attended by representatives of all the colleges in Group I met on October 14th, and decided to make a recommendation to the Governing Bodies of these colleges to be represented at a larger conference which will be held in November, at Leeds, and will be attended by representatives of all the colleges in Groups I, II, and III.

GROUP II. (YORKSHIRE.)

8 Training Colleges (excluding the Sheffield Training College of Domestic Subjects, which has been closed). **785 Students for Examination.**

A conference of representatives of governing bodies of all training colleges in the Yorkshire area took place at Leeds on July 20th, and passed unanimously the following resolutions:

(1) That this conference considers that time does not allow of the new Examination Boards to be established for the 1928 examination, and urges that the Board of Education be asked to continue the present system until 1930.

(2) That this conference considers that a combination of Areas I, II, and III, as given in the letter from the Committee on Universities and Training Colleges, dated 2nd July, would be more suitable for examination purposes than the separate areas.

(3) That this conference take action in conjunction with Areas I and III in calling a joint meeting representing the three areas, in October next, at a centre to be arranged.

(4) That this conference is in favour of forming an examining Board to cover Areas I, II, and III.

(5) That this conference considers it desirable that the co-operation on the new Examination Boards of the universities, the teaching profession, H.M. Inspectors, and other persons with suitable experience should be invited and if possible secured.

GROUP III. (LANCASHIRE AND CHESHIRE.)

9 Training Colleges. 608 Students for Examination.

A conference of representatives of all training colleges in Lancashire and Cheshire was held at Manchester on July 20th, and unanimously passed the following resolutions :

(1) That the Board of Education be requested to continue responsibility, as at present, for the final certificate examinations until a date not earlier than the year 1930.

(2) That the assistance of the universities in the conduct of final examinations in academic subjects for training college students should be welcomed.

(3) (*a*) That it is more desirable to base arrangements for examination purposes on a combination of local authorities and universities rather than upon the individual local authority and the individual university ;

(*b*) That, whilst the representatives of training colleges in Group III (Lancashire and Cheshire) are of the opinion that the colleges in Lancashire and Cheshire would be prepared to act together as a group, they consider that, before taking any further steps, it is desirable that a joint meeting of representatives of the training colleges in Groups I, II, and III should be held in Manchester or Leeds in October next ;

(*c*) That the Board of Education should be asked as to its intention with regard to the examinations in practical subjects ;

(4) That local conferences called in connection with the question of training college examinations should be asked to advise individual colleges not to make any final arrangements with individual universities at the present stage.

GROUP IV. (MIDLANDS.)

4 Training Colleges. 225 Students for Examination.

The authorities of Saltley, Selly Park, and Dudley Training Colleges have had some informal discussions with representatives of the University of Birmingham, and as a result of these discussions a scheme for co-operation has been drafted and will shortly be laid before the university authorities by the Principal of the University and the Professor of Education. A copy of this scheme will be found in Appendix F of this report. It is not at the moment certain whether the Hereford Training College, which was originally included in the Midlands Group, would prefer to associate itself with the University of Bristol or with the University of Birmingham.

GROUP V. (Notts. and Derby.)

3 Training Colleges. 147 Students for Examination.

An informal meeting took place in the summer, attended by representatives of Nottingham University College and of Lincoln and Derby Training Colleges. A friendly discussion took place, and it is proposed that negotiations shall be carried further during the autumn.

GROUP VI. (Eastern Counties.)

6 Training Colleges. 369 Students for Examination.

The Eastern Counties' Colleges are hoping to secure some measure of co-operation with the University of Cambridge. A syndicate was appointed by the Senate at the end of the summer term to enquire into the relations of the university with training colleges, but has not yet been able to meet.

GROUP VII. (West.)

5 Training Colleges. 297 Students for Examination.

Discussions have been held between representatives of the University of Bristol and representatives of Cheltenham St. Paul's, Cheltenham St. Mary's, Salisbury, Fishponds, and Hereford Training Colleges, and a draft scheme has been prepared. This scheme, a copy of which is attached as Appendix G of this report, has been circulated for consideration by the colleges concerned, and has so far been accepted by St. Paul's, St. Mary's, Fishponds, and the Gloucester Training College of Domestic Science.

GROUP VIII. (London.)

22 Training Colleges. 2,070 Students for Examination.

A conference of training colleges in and about London took place on 20th September, when the following resolutions were passed :

(1) That, having regard to the policy of the Board of Education as outlined in Circular 1372, it is desirable that arrangements should be made for the establishment of an Examining Board consisting of representatives of the University of London and of the training colleges concerned ;

(2) That it is desirable that a joint committee be constituted consisting of members representing training colleges and (subject to the approval of the Senate) of members appointed by the university whose duty it shall be to draw up proposals relating to :

- (*a*) the constitution of the examining Board ;
- (*b*) conditions of participation in the scheme ;
- (*c*) finance ;

(3) (*a*) That (in addition to the university representatives) the Joint Council should include twelve members representative of the following :

Church of England Colleges	1
Roman Catholic Colleges	1
Free Church and undenominational colleges (other than municipal)	1
London County Council	2*
Principals of Training Colleges	5
Teachers in elementary and secondary schools ..	2

* viz., one as L.E.A. and one as training college authority.

(*b*) That the Joint Committee should have power to co-opt not more than two members, and that the Board of Education should be asked to nominate someone to attend the meeting of the Joint Committee ;

(4) That the representatives of the bodies (other than the university) named in (3) be requested before communicating officially with the university, to draw up more detailed proposals, and to report again to this conference ;

(5) That pending the establishment of the Joint Committee the London County Council be asked to be responsible for secretarial assistance, postage, stationery, and office accommodation.

GROUP IX. (SOUTHERN COUNTIES.)

8 Training Colleges. 573 Students for Examination.

A meeting of the colleges included in this group, except Culham College, took place on 23rd July. No definite progress was made, the representatives of the governing bodies concerned feeling unable to bind themselves either to accept the area group or to express a preference between Reading University and Southampton University College. It is understood that further discussions are taking place. The Principal of Culham College has informed us that his college authorities are in direct communication with the University of Oxford.

GROUP X. (SOUTH WEST.)

2 Training Colleges. 130 Students for Examination.

This is a small group containing only two training colleges and Exeter University College. Of the two training colleges one, Truro, is willing, on suitable terms, to co-operate with the University College, but the other, Exeter Diocesan Training College, is averse to such an association, and has forwarded proposals for an alternative examination for men's training colleges. These proposals are reproduced as Appendix H of this report.

GROUP XI. (WALES.)

7 Training Colleges. 559 Students for Examination.

A draft scheme for the Welsh training colleges has been discussed by the principals of the colleges concerned and will be further considered at a meeting of the governing bodies of the colleges which has been arranged for a date in November. A copy of the draft scheme is attached as Appendix I of this report.

9. It will be seen from the foregoing report of progress made in the various areas that training colleges generally are prepared to explore, on a basis of geographical grouping, the question of co-operation between universities and training colleges, for the conduct of examinations. It is clear, however, that further time will be needed for the discussion and elaboration of individual schemes, which, in the majority of cases have not yet been submitted, even informally, to the universities. We recommend, therefore, that the conference should take note of the progress made, and should adjourn for a further period in order to allow sufficient time for local schemes for co-operation to be worked out in greater detail and to be formally considered by the universities concerned.

10. In order to facilitate the discussion of the new arrangements we recommend that the conference should request the Board of Education to retain the responsibility for the conduct of the final examination for students in training colleges both in 1928 and in 1929. The students who take their final examination

in any year are for the most part admitted to the training colleges two years previously and the syllabuses on which they are to be instructed and examined should be in the hands of the training college authorities some months before the date of admission. Thus, if the new examination system is to be in operation by July, 1929, the new syllabuses should be ready for issue not later than in April or May of 1927. We do not think it reasonable to anticipate that the new arrangements will have been carried so far by that date. Those who speak for the universities on our body have represented to us that the university authorities cannot be expected to commit themselves to undertaking new reponsibilities of such importance without an adequate period for full consideration. The representatives of the training colleges on their side are impressed with the magnitude of the change and urge that the new schemes of work should be set fully before them some time before they have to be brought into operation. It will be noticed that in two areas the group meetings have urged the desirability of the Board's continuing the present system of examination up to and including 1930, and some of our members are disposed to agree with this view. We think, however, that the next few months should show what are the prospects of local agreements being reached, and in any area where agreement can be reached on points of principle it should not, in our view, be impossible for the new arrangements to be brought into force in time for the 1930 examination. We have accordingly, as we understand from the President's remarks at the conference of 25th March that he is anxious to discontinue the present system of examination as soon as possible, limited our recommendation to the examinations of 1928 and 1929. But we desire to urge that the eighteen months which we suggest is the minimum period required for the elaboration of schemes which concern so many different bodies and involve changes of such importance, and our opinion is that the whole success of the new arrangements will be imperilled by any suggestion that the universities and training colleges should work to a shorter time limit.

11. Until local schemes have been worked out in considerable detail and have been formally considered by the universities and training colleges concerned, it is impossible for us to form any estimate of the number of training colleges which for one reason or another will not be included in a scheme for co-operation with a neighbouring university or universities, and it would be premature at this stage to formulate any scheme for the final examination of students in these colleges. We think it proper, however, to report to the conference that such cases may arise, and that it may be necessary to devise some alternative provision to meet them.

12. It is evidently a matter of the first importance that an adequate minimum standard should be maintained in the several examinations which we contemplate will take the place of the present final examination. With this end in view we recommend that a standardizing Council be appointed representing the Universities, Governing Bodies and Staffs of Training Colleges, Local Education Authorities, the Teaching Profession and the Board of Education. We have not at this stage attempted to lay down the detailed constitution or the functions of this body, as these must largely be determined by the precise nature of the various schemes for co-operation which may ultimately be adopted in the different areas. We may, however, say here that we should not regard it as falling within the competence of the council which we contemplate to over-ride the decisions of an examining body, as to the passing or failing of individual students. Its function would be to advise the Board as to the suitability of the various examinations for permanent recognition as a test for candidates for the teacher's certificate.

13. During the progress of our deliberations there have emerged certain questions on which we recommend that the Board of Education should be asked to make a definite pronouncement. We have been asked, in the first place, whether the Board intend to continue to guarantee the efficiency of training colleges, and whether to this end they will continue unchanged their present system of inspection of training colleges. We gather from what was stated at the conference of 25th March that it is the Board's intention to continue their present practice in both of these respects, but we think that it would facilitate the working out of local schemes for co-operation between universities and training colleges if the board would make public at an early date a definite statement of their policy. We may add that we are impressed by the importance attached by training college authorities to the Board's system of inspection and the valuable assistance given by His Majesty's Inspectors, and we feel sure that we are voicing the opinion of training college authorities all over the country when we recommend that the Board be asked to continue their present system unchanged at any rate for some years to come.

14. We have been asked also what arrangements are to be made in future for the testing of students in subjects which are not at present dealt with in the Board's written examination, but are tested by the Board's Inspectors. The most important of these is of course practical teaching, but other subjects such as handwork, needlework and practical science are, under the system now in force, tested by inspection and not by examination. We understand from what was said at the conference that in practical teaching at any rate the present system will continue, and that the Board's Inspectors will continue to be responsible for the testing of students in this subject, reporting the results of their examination to whatever new examining body may be set up instead of direct to the board as at present. We have no indication of the Board's intentions with regard to the other " practical " subjects, but we understand that some of the new examining bodies may very probably desire, at any rate for the next few years, to have the assistance of the Board's Inspectors in testing these subjects, and we recommend that the Board be asked to announce their willingness to continue the present system of testing practical subjects by inspection in all cases where such a course is desired by the examining body.

15. The manner in which the cost of the new arrangements is to be met needs consideration. Representatives on our Committee of the Universities, Local Education Authorities and Governing Bodies of Training Colleges have told us that the bodies for which they speak would regard it as an essential condition of participation in any scheme for co-operation that they should not, by reason of such participation, be required to undertake any new financial responsibility. It is a natural suggestion that the expenditure should be met in the first instance by charging a separate examination fee to students, but this plan would only throw the question of the incidence of cost a step further back. Training college fees have been raised considerably in recent years, and it is the opinion of those who speak for the colleges that many students would be unable to pay any further fee without having recourse to their local education authority for additional assistance. We note that the President in his remarks to the conference on the 25th March said that he hoped that the conference would not allow its consideration of the problem of co-operation between universities and training colleges to be hampered by questions of finance, which, he thought, might be the subject of further discussion, and we have accordingly regarded it as falling outside our terms of reference to make any recommendations on this subject. We are informed, however, that those concerned will be unwilling to carry the discussion of local schemes for co-operation much further until the incidence of the expen-

diture involved by these schemes has been decided and we consider that the further discussion contemplated by the President should be undertaken at an early date.

16. In conclusion we wish to place on record our high appreciation of the valuable assistance that we have received from our Secretary, Mr. Wilkie, in our inquiry, and in the preparation of this report.

REPLIES FROM THE PRESIDENT OF THE BOARD OF EDUCATION TO CERTAIN RECOMMENDATIONS INCLUDED IN THE PRECEDING REPORT.

Paragraph 10.

The Board will undertake definitely to conduct the final examination in 1928. They are most reluctant to hold it after that year, and they will undertake responsibility for the 1929 examination only if they are assured that local negotiations and discussions will be carried on as expeditiously as possible with a view to securing that the first examination under the new system shall be held in 1930. They are anxious to meet, so far as possible, the wishes expressed in the committee's report, but they must limit their undertaking to conduct the final examination in 1929 to cases in which they are informed by the summer of 1928 that the new examining bodies will be ready to hold their first examination in 1930.

Paragraph 13.

The Board will continue to satisfy themselves, by inspection, of the efficiency of the training colleges which they recognize as providing approved courses of training leading up to the teacher's certificate.

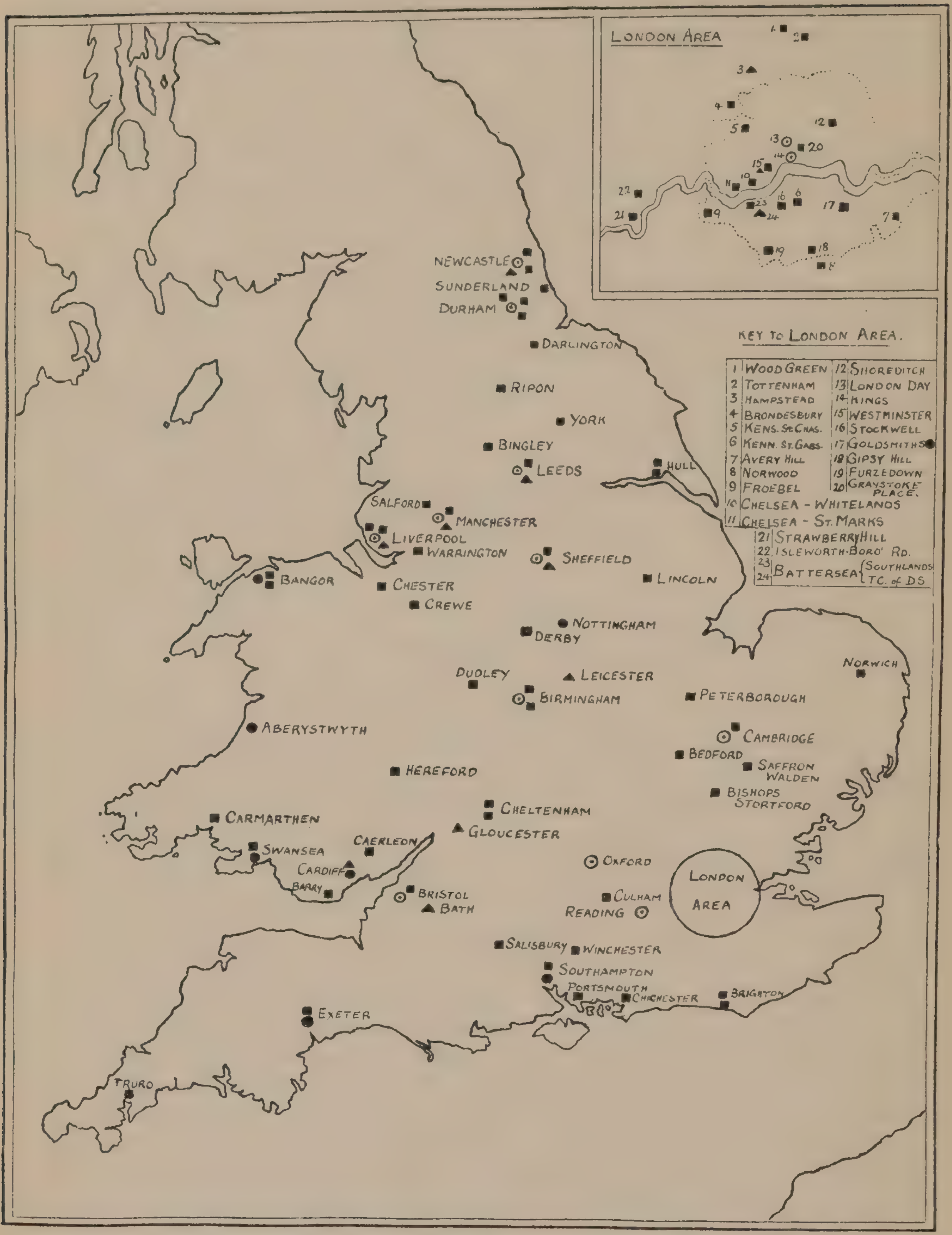
Paragraph 14.

The Board will in all cases retain responsibility for the testing of students in practical teaching. They will also, where they are so desired by the examining body, continue to examine in the so-called "practical" subjects by means of their present system of testing by inspection, at any rate until the examining bodies, after entering on their functions, have had full opportunity of investigating the problem in consultation with the Board.

Paragraph 15.

The Board agree that it would be unreasonable to ask the universities to meet any expense in respect of the new responsibilities which they are being asked to undertake. They note that in the committee's opinion the proposal that students should pay the whole cost of their examination would entail hardship in individual cases and might result simply in a transfer of the burden to the local education authorities. They think, however, that it is desirable in principle that the cost of the new examinations should be met by charging an examination fee and that this fee should be paid wherever possible by the students out of their own resources. They would be prepared to consider an arrangement under which they would meet, by means of a direct grant, half the cost of the new examinations subject to an over-riding maximum of 30s. per student examined. This figure is based on the assumption that it should be possible to carry out the new examinations at an average cost of £3 per student examined, and that on an average half the cost would be borne by the students. The precise method of calculation and the allocation of the grant will require further consideration.

INSTITUTIONS FOR THE TRAINING OF TEACHERS



KEY. ⊙ - UNIVERSITY ● = UNIVERSITY COLLEGE ■ = TRAINING COLLEGE

▲ - TRAINING COLLEGE FOR TEACHERS OF DOMESTIC SUBJECTS

APPENDIX A.

The Conference of 25th March decided that the Sub-Committee should consist of 18 members, distributed as follows:

Universities: Oxford, Cambridge, London, Wales ..	1 representative each.
Combined English Universities	2 representatives.
Local Education Authorities	4 ,,
Governing Bodies of Voluntary Training Colleges ..	2 ,,
Training College Staff Associations and Teachers ..	6 ,,

A Secretary was to be provided by the Board of Education and each body represented on the Committee was to be responsible for the nomination of its own representative or representatives.

At their first meeting the Committee unanimously decided to co-opt as their Chairman Mr. R. J. G. Mayor, formerly Principal Assistant Secretary in the Universities and Training of Teachers' Branch of the Board of Education.

The Committee was finally constituted as follows:

Chairman: Mr. R. J. G. Mayor.

Representatives of Universties.

Oxford	Mr. F. J. R. Hendy (Head of the Training Department).
Cambridge	Rev. T. C. Fitzpatrick (President of Queen's College).
London	Professor Graham Wallas.
Combined English Universities	Professor John Strong (Leeds). Professor C. W. Valentine (Birmingham).
Wales	Professor C. R. Chapple (Aberystwyth).

Local Education Authorities.

Sir Percy Jackson (Chairman, West Riding Education Committee).
Mr. Percival Sharp (Director of Education, Sheffield).
Mr. J. Graham (Director of Education, Leeds).
Mr. G. H. Gater (Education Officer, London).

Governing Bodies of Voluntary Training Colleges.

Mr. G. L. Bruce (British and Foreign Schools Society).
Rev. H. B. Workman (Wesleyan Education Committee).

Training College Staff Associations and Teachers.

Mr. T. P. Holgate (Leeds City Training College).
Miss Spalding (Principal, Bingley Training College).
Miss Richards (Principal, Stockwell Training College).
Professor A. A. Cock (University College, Southampton).
Miss Lloyd Evans (Principal, Furzedown Training College).
Mr. Frank Roscoe (Secretary, Teachers Registration Council).
With Mr. J. Wilkie (Board of Education) as Secretary.

APPENDIX B.

COMMITTEE ON UNIVERSITIES AND TRAINING COLLEGES,
BOARD OF EDUCATION, WHITEHALL, LONDON, S.W.1,
2nd July, 1926.

DEAR SIR OR MADAM,

As you are probably aware, on the 25th March last the President of the Board of Education convened a Conference of representatives of Universities, Training Colleges, Local Education Authorities, and other bodies interested in the training of teachers, to discuss with him certain questions arising out of the report of the Departmental Committee on the Training of Teachers and, in particular, to consider the possibility of co-operation between

Universities and training colleges with special reference to the future conduct of the final examination for students in training colleges on the lines suggested in Circular 1372, a copy of which is enclosed. After some discussion, the Conference resolved to set up a Sub-Committee "to consider in what way co-operation between the universities and training colleges can be best effected," and this Committee has now met on two occasions.

The Committee consider that the solution of the problem before them will most probably be found along the lines of an association of training colleges with universities on a geographical basis, and, as a tentative measure, they have prepared a list showing areas which might be used as a starting-point for local discussions. A copy of this list, setting out the names of the universities and university colleges and of the training colleges in each of these areas, together with a diagram showing the distribution throughout the country of institutions for the training of teachers, is enclosed, and I am instructed by the Committee to ask you to bring this before your governing body for their observations. The Committee would suggest that the most convenient course would be to arrange a meeting in each area at which representatives of the governing bodies of the training colleges concerned could discuss among themselves the suitability of the grouping indicated.

It will be observed that some of the areas shown on the enclosed list include more than one university or university college. This arrangement was adopted in making out the provisional list, because the training colleges in these areas did not appear to fall into sharply defined geographical groups, and it seemed to the Committee that the problem could, in the first instance, be most conveniently considered at a local conference for the area as a whole.

It will be seen, also, that the Universities of Oxford and Cambridge have not been included in any group. The view which the Committee have taken on this point, after hearing the opinions expressed by the representatives of these two universities on the Committee, is that Oxford and Cambridge could not reasonably be asked to enter into local arrangements for co-operation with neighbouring training colleges. It follows from this that no university obviously suggests itself as a centre for the group of colleges in the Eastern Counties, and it will be necessary to consider whether the colleges in this area should associate themselves with universities in other areas, or whether special arrangements should be made for the area.

The Committee understand that in certain areas negotiations under Circular 1372 are already in progress, and they do not, of course, contemplate that any such negotiations should be disturbed or postponed. Indeed, they would suggest that any colleges which, after the preliminary meeting suggested above, feel themselves in a position to approach a university with a view to making arrangements for co-operation, should do so without delay.

The Committee realize that the question of co-operation between universities and training colleges for teachers of domestic subjects will present problems of its own which will, no doubt, require special consideration. They have, however, assigned these colleges to provisional groups in the same way as other training colleges.

The Committee will be glad to receive the observations of the training colleges on the various points mentioned above, together with any information that it may be possible to give as to negotiations proceeding with universities. Replies to this letter should be sent to me at the Board of Education, Whitehall, London, S.W.1. The Committee have been asked to report to the Conference in October, and I am accordingly to ask that your reply may, if possible, be sent not later than the 20th September next.

It is not the intention of the Committee that a reply to this letter should be regarded as committing the training college to accepting any arrangements which may ultimately be proposed. The Committee are concerned at this stage only to know whether, provided that satisfactory arrangements can be made, training colleges will be prepared to co-operate on the basis of the grouping indicated, or any other geographical grouping which may be locally preferred. They contemplate that the details of the schemes for co-operation, which may vary in different areas, will in the main be a matter for discussion between the universities and training colleges concerned. They are proposing at their next meeting to proceed with their general consideration of the question referred to them, and, in particular, to discuss the desirability of making arrangements for co-ordination between the several examinations which they contemplate will take place of the present final examination.

I am,
Yours truly,
J. WILKIE,
Secretary to the Committee.

To the Correspondent.

I. NORTHUMBERLAND AND DURHAM.

University of Durham (Durham Division and Armstrong College).

Durham :
  Neville's Cross Training College.
  Bede Training College.
  St. Hild's Training College.
Darlington Training College.
Newcastle :
  Kenton Lodge Training College.
  St. Mary's Training College.
  Northern Counties' Training College of Domestic Science.
Sunderland Training College.

II. YORKSHIRE.

University of Leeds. University of Sheffield.

Leeds :
  City Training College.
  Yorkshire Training College of Domestic Science.
Sheffield :
  City Training College.
  Training College of Domestic Science.
Bingley Training College.
Hull :
  Municipal Training College.
  Roman Catholic Training College.
York Training College.
Ripon Training College.

III. LANCASHIRE AND CHESHIRE.

University of Liverpool. University of Manchester.

Liverpool :
  Edge Hill Training College.
  Mount Pleasant Training College.
  Calder Training College of Domestic Science.
Manchester :
  City Training College.
  Training College of Domestic Science.
Warrington Training College.
Salford Training College.
Crewe Training College.
Chester Training College.

IV. MIDLANDS.

University of Birmingham.

Birmingham :
  Saltley Training College.
  Selly Park Training College.
Dudley Training College.
Hereford Training College.

V. NOTTS AND DERBY.

Nottingham University College.

Derby Training College.
Lincoln Training College.
Leicester Training College of Domestic Science.

VI. EASTERN COUNTIES.

Cambridge : Homerton Training College.
Norwich Training College.
Saffron Walden Training College.
Bishop's Stortford Training College.
Bedford Training College.
Peterborough Training College.

VII. WEST.

University of Bristol.

Bristol : Fishponds Training College.
Bath : Training College of Domestic Science.
Gloucester : Training College of Domestic Science.
Cheltenham :
  St. Paul's Training College.
  St. Mary's Training College.

VIII. LONDON.

University of London.

- Goldsmiths' College.
- L.C.C. :
  - Avery Hill Training College.
  - Furzedown Training College.
  - Graystoke Place Training College.
  - Shoreditch Technical Institute.
- Chelsea : St. Mark's and St. John's Training College.
- Westminster Training College.
- Battersea : Southlands Training College.
- Brondesbury : Maria Grey Training College.
- Chelsea : Whitelands Training College.
- Froebel Educational Institute.
- Gipsy Hill Training College.
- Kennington : St. Gabriel's Training College.
- Kensington : St. Charles' Training College.
- Stockwell Training College.
- Isleworth : Borough Road Training College.
- Strawberry Hill : St. Mary's Training College.
- Tottenham : St. Katherine's Training College.
- Wood Green : Home and Colonial Training College.
- Hampstead : National Society's Training College of Domestic Science.
- Westminster : National Training School of Cookery, etc.
- Battersea : Polytechnic Training College of Domestic Science.

IX. SOUTHERN COUNTIES.

University of Reading. Southampton University College.

- Southampton : Roman Catholic Training College.
- Brighton :
  - Municipal Training College.
  - Women's Training College.
- Chichester Training College.
- Portsmouth Training College.
- Winchester Training College.
- Salisbury Training College.
- Culham Training College.

X. SOUTH WEST.

Exeter University College.

- Exeter Diocesan Training College.
- Truro Training College.

XI. WALES.

University of Wales. Aberystwyth University College. Bangor University College. Cardiff University College. Swansea University College.

- Bangor :
  - Normal Training College.
  - Women's Training College.
- Swansea Training College.
- Barry Training College.
- Caerleon Training College.
- Carmarthen Training College.
- Cardiff Training College of Domestic Science.

APPENDIX C.

COMMITTEE ON UNIVERSITIES AND TRAINING COLLEGES,
BOARD OF EDUCATION, WHITEHALL,
LONDON, S.W.1, *2nd July*, 1926.

DEAR SIR,

I am instructed by my Committee to send for your information a copy of a letter which they have addressed to the governing bodies of training colleges in England and Wales. As is stated in this letter the Committee contemplate that the details of any schemes for co-operation will be in the main a matter for consideration between the universities and training colleges concerned, and they anticipate that if, and when, requests for university co-operation are made, they will be made direct to the universities on the initiative of the training colleges. The Committee do not feel in a position to ask the universities to take the question formally into consideration until matters have been carried further by local discussion among the training colleges, but they have thought it desirable that the universities should be kept informed of the progress of the Committee's deliberations.

I am, Yours truly,
J. WILKIE,
Secretary of the Committee.

To the Registrar.

APPENDIX D.

List of persons invited to act as conveners of group meetings of training colleges :

Group I.	Mr. A. J. Dawson, Director of Education, Durham County.
Group II.	Sir Percy Jackson, Chairman, West Riding Education Committee.
Group III.	Mr. Spurley Hey, Director of Education, Manchester.
Group IV.	Professor C. W. Valentine, Professor of Education, University of Birmingham.
Group V.	Professor H. A. S. Wortley, Professor of Education, Nottingham University College.
Group VI.	Miss Allan, Professor of Homerton College, Cambridge.
Group VII.	Miss Wodehouse, Professor of Education, University of Bristol.
Group VIII.	Mr. W. H. Webbe, L.C.C. Education Committee.
Group IX.	Mr. F. H. Toyne, Secretary for Education, Brighton.
Group X.	Rev. R. L. Collins, Principal, Exeter Diocesan Training College.
Group XI.	Mr. D. R. Harris, Principal, Bangor Norman Training College.

APPENDIX E.

FINAL EXAMINATION OF STUDENTS IN TRAINING COLLEGES.

Tentative suggestions made at a Conference held at Neville's Cross College on Monday, 28th June, 1926, of representatives of training colleges in the County of Durham, and of the Council of the Durham Colleges in the University of Durham.

We suggest the following scheme for consideration :

1.—Joint Examinations Board.

(1) That, in the opinion of this Conference, it is desirable to set up a Joint Examinations Board for the area served by Durham University, to undertake the final examination of students in training colleges now conducted by the Board of Education, and that the Senate of Durham University should be invited to consider the question of setting up such a Board.

(2) It is suggested that such a Board might be constituted as follows :

- (*a*) Eight representatives of the University to be appointed by Senate. (Suggested that the Professors of Education in each division of the University and six other representatives might be appointed).
- (*b*) One representative of the governing body of each training college co-operating in the scheme.
- (*c*) The principal of each of the training colleges co-operating in the scheme.
- (*d*) The Director of Education of each L.E.A. maintaining such a training college.
- (*e*) Subject to the consent of the Board of Education, two representatives of the Board of Education (to be appointed by that Board).

(3) It is suggested that the powers and duties of the Joint Examinations Board be as follows :

- (*a*) To conduct the examination and to issue certificates.
- (*b*) To consider, and give final approval to, syllabuses and examination questions proposed by the Board of Studies.
- (*c*) To receive from the Board of Studies the results of the examination, recommendations as to the award of certificates, and reports upon any other matters to which they desire to call attention.
- (*d*) To correspond with the Board of Education on all matters relating to the examination ; to deal with all matters of finance ; and, generally, to undertake all administrative duties in connection with the examination.

2.—Board of Studies.

In the event of such a Joint Examinations Board being formed, it is suggested :

(1) That a Board of Studies should be established and constituted as follows :

- (*a*) The principal of each college co-operating in the scheme or his (her) deputy, and an equal number of representatives of Durham University.
- (*b*) Two representatives of the Board of Education.

(N.B.—The Board to be entitled to invite training college lecturers to attend any meeting.)

(2) That the duties of the Board of Studies should be as follows :

- (*a*) To consider syllabuses prepared by the various colleges and to advise the Joint Examinations Board thereon after consultation with any principal concerned, if thought desirable.
- (*b*) To decide the number and scope of the question papers necessary in each subject, to consider these papers when prepared, and to advise the Joint Examinations Board thereon.
- (*c*) To recommend persons to the Joint Examinations Board for appointment as examiners.
- (*d*) To suggest dates and times of examinations.
- (*e*) To fix the standard of the examination and arrange for the standardization of the marking and of the results.
- (*f*) To receive reports from the examiners, to forward them to the Joint Examinations Board, together with the results of the examination and recommendations as to the award of certificates.
- (*g*) Generally to consider and report to the Joint Examinations Board on any matters in connection with the examination.

3.—Examination Expenses.

That, as the Board of Education is being relieved of expense in connection with the examination, they should be asked to make a grant for this purpose at the rate of £2 for each student examined.

APPENDIX F.

EXAMINATION OF STUDENTS IN TRAINING COLLEGES.

MIDLAND AREA.

It is suggested that the University of Birmingham should act in co-operation with the training colleges in the examination of students for the certificate, and that the certificate issued in the Midland area should be issued by the Board of Examinations with the endorsement of the Board of Education.

There would be appointed :

- (1) A Board of Examinations ;
- (2) Boards of Studies.

1.—Constitution.

(1) *The Board of Examinations* would consist of :

- (*a*) Representatives of the University ;
  The principal (*ex officio*), the heads of departments, or their deputies, in English, History, Geography, Education, Mathematics, and two representatives from the Faculty of Science.
- (*b*) A representative of the Governing Body of each T.C.
- (*c*) Principals of training colleges.

(2) *The Boards of Studies* would consist of one representative from each college, for each subject, and a representative appointed by the University. Each Board of Studies would elect a Convener.

2.—Functions.

(1) *The Board of Examinations would* :

- (*a*) Consider suggested syllabuses.
- (*b*) Appoint internal and external examiners.
- (*c*) Discuss any suggestions made with regard to the conduct of the examination.
- (*d*) Publish the names of the students to whom certificates are awarded.
  (It is suggested that an additional diploma should be issued to students whose work is of a sufficiently high standard.)

(2) *The Board of Studies would* :

- (*a*) Suggest syllabuses of work in each subject.
- (*b*) Nominate internal and external examiners.
- (*c*) Make representations as to the conduct of the examination.

3.—Conduct of Examinations.

There would be an internal and an external examiner in each subject:

(1) The examiners:
  (*a*) Would collaborate:
    (*i*) In setting papers;
    (*ii*) In standardizing scripts.
  (*b*) Would decide upon failures and decorations after considering the order of merit lists in each subject, during two years' work, submitted by the colleges.

  The final word in assessing failures and decorations to rest with the external examiners.

(2) It is suggested that the staffs of the training colleges should mark examination scripts of their own colleges and submit the list of marks to the examiners, who would select specimen scripts in order to test and standardize the marking.

(3) It is expected that the Board of Education will be responsible for the final standardization.

(4) In certain subjects—e.g., handwork, needlework, drawing, elementary science, etc.—the present method of examination will continue except that the external examiners will take the place of H.M. Inspectors. The lecturers will provide grouped lists and the external examiner will inspect and test individual selected students.

In advanced and credit courses where written scripts may be necessary in addition to the inspection, the method of examination will be that suggested in paragraph 3 (1, 2, 3). This method of examination will apply to subjects in certain colleges which require inspection as well as written examination—e.g., a special scheme in geography.

4.—Meetings.

(1) The Board of Examiners will meet:
  (*a*) In January or February to make arrangements for the final examination.
  (*b*) In late September or early October to decide upon the students to whom certificates or diplomas should be issued.

(2) Boards of Studies will have conveners who will be responsible for calling meetings so as to submit to the Board of Examinations the syllabuses of work for the following session and suggestions for the conduct of the examination (*see paragraph* 2 (2)) not later than December of the preceding year.

5.—Finance.

The cost of the scheme will be met by an examination fee charged to the students of the colleges concerned. The amount will depend upon the number of colleges in the group. A rough estimated based on a small group of colleges is a maximum of £3 per student.

6.—Comments.

(1) It is not suggested that the same syllabuses in any subject should apply to all colleges in the group, but it is obvious that the expense and difficulty of examining will be decreased if the Board of Studies in each subject can obtain some measure of uniformity in the syllabuses suggested.

(2) It is proposed that the Board of Education should continue to:
  (*a*) Approve all appointments on the staffs of training colleges.
  (*b*) Continue to visit colleges so as to *advise* on methods of teaching, equipment, syllabuses, etc.

APPENDIX G.

DRAFT SCHEME FOR THE FORMATION OF A WESTERN JOINT COMMITTEE OF THE UNIVERSITY OF BRISTOL AND RESIDENTIAL TRAINING COLLEGES.

Object.

In view of the Board of Education's proposed withdrawal from examining training college students, to supply organization whereby both the university may co-operate with the colleges and the colleges with one another, in the arrangement of studies and examinations.

Constitution of Committee.

(*a*) The Vice-Chancellor, the Professor of Education, and three others appointed by the Senate of the University.

(*b*) The principal of each college.

(*c*) One or more persons experienced in the inspection of training colleges, appointed by the Senate on the nomination of the Joint Committee.

Functions and Meetings.

The Committee to meet:

1.—*In October* (or late September) to appoint Boards of Studies. (*See* below.)

2.—*In March* to approve syllabuses and appoint internal and external examiners. All proposals to be sent to the Registrar three weeks beforehand by the conveners of the Boards of Studies.

3.—*In July* (or late September) a joint meeting with all internal and external examiners to determine results and make recommendations accordingly to the Board of Education. This meeting to have the final responsibility for all such recommendations.

Boards of Studies.

The Joint Committee to be empowered to appoint Boards of Studies for various subjects or groups of subjects, whose duties shall include the consideration and recommendation of syllabuses prepared by the several colleges, and the nomination of internal and external examiners. Every internal examiner, if not already a member of the appropriate Board of Studies, to become so *ex officio*. Boards of Studies to have power to co-opt other members.

Finance.

All expenses of the Joint Committee, including expenses of the authorized examinations, inspections, and meetings of the Boards of Studies, to be borne by the colleges entering the scheme. The Committee shall supply to the college such figures as will show the proportion of these expenses to be met by each college.

Note.—Each college entering into the scheme to have absolute freedom to withdraw from the scheme if it so desires, after giving not less than two years' notice of such intention. This period to be calculated so as to expire in the month of September of any year.

APPENDIX H.

Draft of a suggested constitution for a Board of Examination for Residential Colleges for the Training of School Masters, to be formed in the event of the Board of Education deciding to discontinue their present examinations for the certificate of the Board.—(*Submitted by Exeter Diocesan Training College.*)

1.—The Board shall be called "The Examination Board for the Diploma in Education of the Residential Colleges for School Masters."

2.—The Board shall consist of the principal and one member of the whole-time teaching staff of each college joining the Board, such member to be elected by the whole-time teaching staff and to be eligible for re-election.

3.—The Board to provide for the examination at the end of their course (and, if so decided, at the end of the first year of a two-year course) of all students in the colleges concerned other than those taking university examinations. It shall also, in the event of the Board of Education discontinuing its inspection in practical subjects, make provision for the inspection of such subjects.

4.—The Board is to appoint subject committees, consisting of one teacher responsible for each of the subjects taught in the several colleges. These committees shall:

(*a*) Draw up syllabuses in their subjects for confirmation by the Board;

(*b*) Confer with the examiners appointed to conduct the examination in their subject.

5.—Until otherwise determined the examination and inspection shall be carried out as at present provided for by the Board of Education, and the subjects taken by students shall be as set forth in Article 40 of the Regulations for the Training of Teachers.

6.—The papers shall be set and marked by one or more members of the Subjects Committee, together with an external examiner appointed by the Board, under the following conditions:

(*a*) There shall be one examiner for each 200 students taking a particular paper or, in the case of the longer papers, each section of a paper. An examiner shall not, save in unavoidable circumstances and with the approval of the Board, examine in a particular subject two years in succession, nor may he examine students of his own college in a subject or the particular section of a subject in which he has been lecturing during their last year;

(*b*) Colleges may indicate to the examiners the particular course which they are taking and an examiner may discuss with colleges the general lines of his paper, but no lecturer shall see the actual paper set before the examination;

(*c*) All papers when marked shall be sent to the external examiner, who shall act as assessor, and no student who is not adjudged by him to have passed in the subject shall be allowed to pass, nor shall a pass with credit or distinction be awarded without his concurrence ;

(*d*) Examiners shall be paid at per paper marked, and shall complete their work and send their marks and the whole or some of the marked papers to the external examiners within twenty-one days of the conclusion of the examination. The results shall be published on or before the 7th September in each year ;

(*e*) The inspection in practical subjects may or need not be carried out by the examiners, at the discretion of the Board, provided that it shall be recognized that all work, whether of examination or inspection for the diploma, shall be paid for by the Board, and shall not be a charge upon the several colleges or regarded as a part of the ordinary work of the teaching staff.

7.—The Board may appoint a paid secretary, whole or part-time, and shall have a registered office. They shall also make provision for the production of the papers and for their being kept secret.

8.—The expense of the examination shall be borne by the students, an inclusive fee of £4 4s. 0d. being charged to every student taking the diploma examination. Students taking only a part may have a portion of the fee remitted as may be hereafter determined by the Board, such fee to include necessary stationery.

9.—No student shall be admitted to any part of the examination until his fee and a certificate of good conduct from the principal of his college have been received at the registered office of the Board.

10.—The Board shall issue to successful candidates a diploma setting forth the result of the examination as is at present done in the case of the Board of Education Certificate.

11.—In order that the standard of the examination may be maintained, at least 10 per cent. of the aggregate number taking the examination as a whole shall be deemed to have failed, and the number of passes with credit or distinction shall also be limited. Candidates who fail may be re-examined as at present, in the whole examination or a portion of it, at the end of the first and second years following the completion of their course.

12.—This constitution shall not be altered without notice being given, and no change shall be made in it without a majority of two-thirds of the total number of members.

APPENDIX I.

TRAINING COLLEGES OF WALES, AND CIRCULAR 1372.

Suggestions *for the establishment of an Examining Body representative of the University of Wales and the Training Colleges of Wales to examine students of the Welsh Training Colleges for the purpose of their recognition by the Board of Education as Certificated Teachers.*

1.—Training College Delegacy.

For this purpose it is proposed that the Court of the University of Wales under the powers conferred on it by Article 13, Paragraph 9, of the Charter of the University, should establish a Training College Delegacy to be constituted as follows :

(*a*) CONSTITUTION OF TRAINING COLLEGE DELEGACY :

Ex-officio Members : The Vice-Chancellor of the University ; the principals of the associated training colleges ; two representatives of the Board of Education.

Representative Members : Six representatives of the Academic Board of the University ; six representatives of the University Court. Each such representative to be specially concerned with the affairs of one of the associated training colleges.

(N.B.—Should the number of associated training colleges be greater or less than six this number will vary accordingly.)

(*b*) DUTIES OF THE TRAINING COLLEGE DELEGACY :
The duties of the Delegacy will include the arrangements to be made for the certificate examination of students of the associated training colleges, including the appointment of examiners, the payment of fees, and other expenses, etc.

2.—Examining Boards.

For each of the associated training colleges there shall be set up an Examining Board to be constituted as follows:

(*a*) The external examiners (one for each subject) appointed by the Training College Delegacy;

(*b*) The training lecturers responsible for the courses examined;

(*c*) The principal of the training college, who will be the Chairman of the Examining Board for his or her college.

Under this scheme it is suggested that the external examiners shall be the same for all the colleges, thus maintaining a uniform standard throughout the associated colleges.

3.—Duties of the Examining Boards.

It will be the duty of the Examining Board to carry out the final examination of the students of the associated colleges as follows:

(*a*) The external examiner will set the question papers on the prescribed syllabus and submit the same to the principal of the college concerned for the consideration of the internal examiner. For the final form of the paper the external examiner will be responsible and wherever possible the same paper of questions should be taken by all students throughout the associated colleges.

The external examiners will mark the scripts of:

(i) All candidates recommended for credit or distinction;
(ii) All doubtful candidates;
(iii) Samples of the rest.

(*b*) The internal examiner will mark **all** papers in the first instance and send them on to the external examiner as provided under (*a*) above.

4.—Preparation of Certificate Lists.

The external examiners will meet at a centre to be determined upon for the preparation of the college lists and the internal as well as the external examiners, that is the full examining body of the college concerned, will be in attendance on the day when the list for that college is being prepared.

The lists when approved by the Examining Board will be signed by each of the examiners, countersigned by the principal of the college, and submitted to the Board of Education for approval before publication.

The certificate itself will be issued on the authority of the Training College Delegacy, and endorsed by the Board of Education. On each certificate shall be stated the subjects in which the student has passed the examination, and the subjects in which the pass has been obtained with credit or distinction shall be specially indicated.

5.—Boards of Studies.

It is suggested that provision shall be included in the scheme for the creation of Boards of Studies to be constituted by all members of staff of the associated training colleges, meeting in sections according to subjects or in general session if and when this is desired. The business of the Boards of Studies will be to discuss syllabuses, etc. It is suggested that there should ordinarily be one such meeting annually, to be held either in the Christmas or Easter Vacation at some central place—e.g., Shrewsbury. Each college will be responsible for its own syllabuses.

6.—Finance.

It is suggested that each training college should be responsible for its proportion of expense incurred in carrying out these arrangements. On this plan it would be left to the authorities of the individual college to recover the cost by the imposition of an examination fee, if this were desired.

7.—Application to the University Court.

It is suggested that the principal of each of the colleges should ask the governing body of his or her training college to pass a resolution inviting the University Court to take steps to set up an examining body on the lines suggested with a view to carrying out the terms of Circular 1372 in accordance with the recommendations of the "Report of the Departmental Committee on the Training of Teachers."

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